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INTRODUCTION: BRUNER'S WAY

David Bakhurst and Stuart G. Shanker

The subject of this book is Jerome Bruner's contribution to our understanding of the mind. Although Bruner has often concerned himself with concrete and practical issues, such as education (Bruner, 1960, 1966, 1996), child development (1983a) and, mostly recently, the law (Amsterdam and Bruner, 2000), he has always been an intensely theoretical thinker, a man fascinated by ideas. His writings have been constantly informed by broadly philosophical themes, drawn not just from philosophy itself, but from linguistics, literary theory, anthropology and other disciplines (see Bruner, 1979, 1986). No matter how small or matter-of-fact his subject, Bruner is always keen to explore what it tells us about the nature of psychological studies in general and their contribution to our understanding of ourselves. His prodigious influence is in part due to the theoretical profundity of his work and the light it has cast on the central concepts and methods of psychology. For this reason we have chosen to focus this volume on Bruner the philosophical psychologist and philosopher of psychology.

The book is not a *Festschrift*.[1] Although the contributors' admiration for Bruner is evident in every chapter, their primary concern is not to celebrate his legacy, but to use his work as a lens through which to see contemporary debates in psychology and cognate disciplines, debates about mind and culture, language and communication, identity and development. The sheer scope of Bruner's contribution over the decades makes him an apt figure for this purpose. There is hardly a major area of psychology on which Bruner has not written, and no area to which his work is not relevant. This is evidenced by the range of topics addressed by our contributors, which include language and its development, pragmatics and the emotions, education, memory, rules and normativity, discourse, dialogue, and the self.

Another reason why Bruner is an ideal focus is his role in two crucial paradigm shifts in twentieth-century psychology. In the 1950s, he was an instrumental figure in the cognitive revolution, which restored to psychology the inner life of the mind after decades of arid behaviourist objectivism. Cognitive psychology prospered and, in league with other fields, evolved into 'cognitive science', conceived as a systematic interdisciplinary approach to the study of mind (see Gardner, 1985). Bruner, however, gradually grew more and more dissatisfied with what cognitivism had become. In 1990, he published *Acts of Meaning*, in which he argued that the cognitive revolution had betrayed the impulse that had brought it into being. The revolution's principal concern, Bruner argued, had been to return the concept of meaning to the forefront of psychological theorizing. But cognitivism had become so enamoured of computational models of the mind that it had replaced behaviourism's impoverished view of the person with one no better: human beings as information processors. In response, Bruner argued forcefully that meaning is not a given, but something made by human beings as they negotiate the world. Meaning is a cultural, not computational, phenomenon. And since meaning is the medium of the mental, culture is constitutive of mind.

In many ways, Bruner's objection was familiar. It had often been lamented that mainstream psychology was individualistic and scientistic, representing minds as self-contained mental atoms and ignoring the social and cultural influences upon them. In the last decade, however, this well-known critique has really been gaining momentum. Besides Bruner, both Richard Shweder (1990) and Michael Cole (1996) have sounded the call for a new 'cultural psychology'. Assorted versions of 'constructionist' and 'discursive' psychology have appeared on the scene, joining a veritable chorus of diverse voices urging that psychology treat the mind as a sociocultural phenomenon (e.g., Edwards and Potter, 1992; Harré and Gillett, 1994; Gergen, 1999). It is particularly striking that these voices no longer come exclusively from the margins. Just as the left/right divide is collapsing in political theory, so the dichotomy between mainstream 'individualistic/scientistic/Cartesian' psychology and radical 'communitarian/interpretative/post-Cartesian' psychology has become outmoded. Cognitive scientists and philosophers of mind now commonly acknowledge that no plausible account of the mind can be indifferent to the context in which we think and act, and some significant works have appeared devoted to the cultural origins, and social realization, of human mentality (e.g., Donald, 1991). A psychologist interested in culture is no longer a counter-cultural figure.

For all that, however, there is no consensus about exactly how to accommodate culture within psychology. Shweder's and Cole's respective visions of cultural psychology differ significantly from each other and from Bruner's. And while some thinkers believe that psychology must embrace the cultural as an alternative (or as an antidote) to scientific theories of mind, others seek to incorporate the study of culture's influence on mind into scientific psychology.

It is thus an excellent time to take stock of this 'cultural turn' in psychology and of the various conceptual presuppositions behind it. Bruner's work is perfectly situated for such an enquiry. His status as a disaffected cognitivist means that he has a fine understanding of the positions he now criticizes. Moreover, although Bruner increasingly strikes a radical posture, drawing on literary-critical and 'postmodern' sources, his attitude to cognitive science is basically reconciliatory. Bruner sees himself as pursuing the same theoretical goals that motivated the original cognitive revolution and he is no enemy of systematic theory or experimental enquiry. He is thus someone capable of entering into fruitful dialogue with everyone in the debate, another fact that explains his considerable influence on so many diverse thinkers.

A further reason to focus on Bruner is this. We can make progress on such issues as the fate of the cognitive revolution, and the relation of culture and mind, only by addressing some intensely theoretical questions about the fundamentals of psychological explanation. Cognitive science prides itself on being *science*, but it is driven by strong conceptual commitments, which seem to invite philosophical criticism on purely conceptual grounds. How are we to understand the relation between, on the one hand, empirical, psychological enquiry and, on the other, philosophical reflection on the nature of the mind? Here Bruner's work is particularly enlightening. As we remarked above, he has always been a distinctively philosophical psychologist, both in his appreciation and use of certain philosophical ideas, and in his supremely reflective and speculative approach to psychological study. At the same time, Bruner continually seeks to deploy conceptual analysis to assist the construction of empirically supported theories of genuine practical import. In what follows, we argue that Bruner's approach offers an instructive illustration of the fruitful interplay of empirical and philosophical enquiry. It is a model from which psychologists, cognitive scientists and philosophers of mind have much to learn.

To make this case, however, it is important to formulate the distinction between empirical and conceptual enquiry properly. We should not make it seem, of course, as if we must choose between empirical studies uninformed by reflection upon their conceptual foundations or conceptual speculation utterly indifferent to empirical findings. Neither strategy is serious. What is at issue is whether, and to what degree, the nature of mind is best revealed by empirical theories, grounded in observation and experiment, of the kind propounded by the natural sciences. Or can part of the mind's nature only be captured by philosophical reflection on our concepts of mind and mental phenomena?

This issue, which is as difficult as it is fascinating, has haunted the relation of philosophy and psychology since the latter's emergence in the mid-nineteenth century. Before turning to Bruner, it is worth considering the two disciplines' tense relationship in more detail.

Philosophy and psychology

What is the relation between philosophy and psychology? What should it be? Philosophy is a variety of conceptual enquiry that involves speculative reflection upon our fundamental concepts, beliefs and forms of thought, principally with the aim of elucidating the relation of mind and world and the nature of value. Psychology, in contrast, aspires to study the mind empirically and scientifically. The history of philosophy, of course, contains many views of the nature of philosophy itself and its relation to empirical enquiry. For all their variety, they may be grouped into two main kinds. The first, illustrated famously by Descartes and Kant, casts philosophy in a normative, foundational role. The philosopher's task is to legitimate the conceptual framework of empirical enquiry by grounding our fundamental concepts, beliefs and forms of explanation. The second, seen in Locke and Hume, portrays the philosopher as describing and clarifying our fundamental conceptions, rather than as justifying them. Many exponents of the first approach represent themselves as defenders of the sciences, though the pretension that philosophy writes permissions has often irritated scientists, who do not perceive their claims as needing an external warrant. Theorists of the second sort tend to be more subservient to science. Witness Locke's famous self-effacing portrayal of the philosopher as the 'underlabourer' for the sciences, engaged 'in clearing the ground a little, and removing some of the rubbish, that lies in the way to knowledge' (Locke, 1979: 10). Yet proponents of conceptual clarification usually conceive of themselves as defining limits to knowledge or intelligible discourse and thereby as setting constraints on empirical enquiry. To clarify our conceptions, the philosopher establishes criteria to distinguish the meaningful from the meaningless, sense from nonsense. Here again is potential for conflict between the philosopher and the scientist. Even the logical positivists, who were as enamoured of science as any philosophers could be, were keen to tell scientists what could or could not be said. Naturally, scientists tend to resist these incursions, reasoning that where there is no conflict between philosophy and science, philosophy leaves science where it is, and where the two are in tension, it is only the progress of science that will reveal whether the philosopher's qualms are justified.

Thus however much philosophers cast themselves as underwriters or handmaidens of empirical enquiry, the potential for conflict between philosophy and science is always real. And this is especially so when the science in question is psychology, for both disciplines lay claim to the mind as their primary object of investigation. Having largely conceded the world to the natural sciences in the early modern period, philosophers were not about to give up the mind. So when psychology began to emerge in the nineteenth century, many philosophers resisted the idea that mental phenomena could be captured in the net of scientific explanation. Even William James, so often heralded as the father of American psychology, confessed to a colleague at Harvard that he regarded psychology as 'a nasty little subject' because 'all one cares to know lies outside' the bounds of empirical research (Fancher, 1979: 166). James's distaste issued from the fact that the new science of psychology was deeply committed to a mechanist paradigm, whereas the primary task of philosophy, as he conceived it, was to explain and preserve those aspects of human existence that render us distinctly human, such as the higher emotions and freedom of the will.

The deterministic conceptions James abhorred recurred in many species of twentieth-century psychology: first in the overwhelming spread of behaviourism, which promised to transform psychology into a branch of social engineering; then in the explosion of Artificial Intelligence in the mid-1950s, which rendered the mind a computational device; and, more recently, in the dominance of genetic determinism, which sees the development of our 'species-typical behaviours' as a matter of biological maturation. In addition, where psychology has not simply ignored the higher emotions, it has reduced them either to chemical and motor processes inherited from our distant forebears or to 'socially conditioned behaviours'. Finally, the development of neuro-imaging techniques has opened up the prospect of tracking the chain of neural events from impulse to action, seemingly rendering discussions of 'free will' a quaint philosophical pastime. James would not have been amused.

Philosophers have reacted to these assaults on their fiefdom in various ways. Many have been impressed by the power of empirical approaches, especially Artificial Intelligence, and have sought to bring the philosophy of mind into line (AI, of course, inspired influential functionalist philosophies of mind). A few have gone further and embraced scientism, arguing that the philosophy of mind is obsolete. The majority, however, have continued to insist on the primacy of philosophical theories for establishing the parameters of psychological research, and some have sought to rein in the pretensions of psychology. Wittgensteinians, for example, have argued that psychologistic and cognitivist theories misconstrue the logical grammar of psychological concepts. While the physical processes that underlie our mental lives are open to scientific investigation, the nature of the mental can be disclosed only by elucidating our psychological concepts, especially as they are expressed in our language practices. Of course, there are many facts about the way in which people think and act which are open to empirical scrutiny, but these are not facts of a kind that can be regimented into scientific explanations. They are simply too infused with normativity. Human mentality and behaviour must be understood 'from within', and this involves acute observation and description, sensitive to the variety and complexity of our practices, rather than the subsumption of human behaviour under supposedly explanatory laws. While this Wittgensteinian response represents one, perhaps extreme, rejection of scientific psychology, philosophers of many different stripes would assent to parts of it.

Thus, all things considered, the relation between philosophy and psychology in the twentieth century was characterized more often by a spirit of conflict than of cooperation. Moreover, the divergence between the two fields was thoroughly institutionalized. Philosophy is often taught as a largely historical discipline, with great emphasis placed on prominent individuals and influential schools. In this, little attention is paid to the leading figures in the history of psychology (or other sciences) and even less to current psychological writings and debates. The student is typically required to master the tools of informal and formal logic, and to reflect on abstract questions in the philosophy of science, but little attention is paid to mastering the techniques of scientific reasoning and theory construction. And while philosophy graduates may be adept at identifying problems implicit in the questions psychologists ask, they are usually ignorant of the complexities involved in constructing well-considered experiments, designing psychological research projects, or interpreting empirical data in light of a developing theory.

Psychology, in contrast, is usually taught as an ahistorical discipline. The standard textbooks make only brief mention of the important figures of the past, and include virtually no discussion of philosophical concepts or methods. The emphasis is placed squarely on the specific problems studied by the various sub-branches of psychology, and on the research methods whereby theories and hypotheses can be rigorously tested. Thus psychology students become skilled at gathering and interpreting data, but not nearly so proficient at discussing the broader implications of their findings.

At least until recently, matters have been hardly more promising at the professional level. Joint conferences organized around some common theme often degenerate into polarized affairs with each camp regarding the other as an alien culture with a peculiar and opaque idiom. Philosophers tend to see rank and file psychologists as theoretically unsophisticated, blind to the conceptual issues that *really* matter; psychologists, in contrast, often tolerate philosophical speculation only for its instrumental value in the construction of experimentally testable research projects. The psychologist tells the philosopher, 'These thoughts are all well and good, but how can we operationalize them?', to which the philosopher replies, 'That you wish to "operationalize" such thoughts merely reveals the artificiality of your approach.' In short, little has come of the widespread desire for cross-fertilization between philosophy and psychology.

Fortunately, however, this unhappy circumstance is changing. In the past decade, philosophers of mind have become increasingly concerned to make their ideas gel with our best empirical theories of mental functioning. It is no longer credible to be a philosopher of mind who is uninterested in the way human minds actually work. It might be thought that this is a direct, if rather belated, effect of Quine's famous assault on the analytic/synthetic distinction. In the 1950s, Quine attacked the idea that there are 'analytic' statements true solely in virtue of the meaning of their constituents (Quine, 1953). In contrast, Quine maintained that all beliefs face 'the tribunal of experience' and belief truth may be held true 'come what may' so long as one is prepared to make radical enough alterations to the rest of one's beliefs. But if there are no analytic truths, there is no such thing as 'purely conceptual' enquiry. Thus there cannot be a division of labour between philosophers engaged in the examination of concepts and scientists who explore empirical facts. Quine therefore called for the 'naturalization' of epistemology (1969). The theory of knowledge, he argued, should be absorbed into psychology, neurophysiology and related empirical disciplines.

Quine's arguments have been enormously important, though their influence on the present scene is rather oblique. Quine himself rejected the dogma of analyticity as part of a wholesale attack on meaning and intentional states. No such phenomena, Quine argued, could have a role in a genuinely explanatory theory. There is thus a direct line from Quinean behaviourism to eliminitive materialism, the view that our everyday ways of describing and explaining mental phenomena (our 'folk psychology') are fundamentally misconceived and should be replaced by a scientific account of the mind cast in non-intentional terms. Ironically, the appearance of eliminitivism in the 1960s, and its resurgence in the 1980s in the hands of Stephen Stich (1983) and the Churchlands (Patricia Churchland, 1986; Paul Churchland, 1989), helped intensify the traditional conviction that there *is* a role for purely conceptual reflection in the philosophy of mind, for eliminitivism seems flawed precisely on the grounds that it does violence to our *concept* of the mental. Quine's arguments, however, were an important impetus for the broadly naturalistic views that now dominate the philosophical scene. In epistemology, philosophy of mind, and many other branches of their discipline, the majority of philosophers now declare themselves to be 'naturalists', and although conceptions of naturalism vary, everyone seems agreed that it requires that philosophical theories be compatible with the findings of the natural sciences. In this climate, it is unsurprising that many philosophers take an interest in what science has to say about the mind.

Though the rise of naturalism is an important contributing factor, other recent developments have also helped stimulate fruitful interplay between philosophy and psychology. First, the past 15 years have seen renewed interest in cognitive science conceived as a coherent, systematic 'interdiscipline'. This interest was the result of a number of factors, including: the development of parallel distributed processing approaches that promised effective, realistic models of the kind of complex processing that occurs in animal nervous systems; the explosion of cognitive neuroscience; the growth of primatology and the renewed interest in ape language research; advances in genetic modelling; and the influence of anthropological thinking on psycholinguistics and developmental psychology. Cognitive science began to receive significant institutional recognition, and innovative programmes have been established at a number of leading universities.

Second, and perhaps most important, work of real quality is finally being done at the interface of psychology and philosophy. One excellent example is the Project on Spatial Representation supported by King's College Research Centre, the various proceedings of which show an extraordinarily fruitful interplay between conceptual and empirical approaches to fundamental questions about the self, agency and bodily awareness (Eilan, McCarthy and Brewer, 1993; Bermudez, Marcel and Eilan, 1995). Another is the mass of interesting work on 'theory of mind' in which philosophical conceptions of mind have been brought to bear in significant ways on developmental issues about children's understanding of self and other (e.g., Astingston, 1993; Gopnik and Meltzoff, 1997). Moreover, compelling work on the borders of philosophy and psychology has been presented in highly accessible ways, such as the empirically informed philosophy of mind of Daniel Dennett (e.g., Dennett, 1991) and the philosophically rich perspective of neuroscientist Antonio Damasio (1994, 1999).

However, although there are thus grounds for optimism about the prospect of further rewarding interplay between philosophy and psychology, the old controversies about the relation of the two fields have found no satisfying theoretical resolution. Indeed, the question of the relation of the conceptual and the empirical in psychological enquiry is all the more urgent. Let us see, then, what there is to learn from Bruner's legacy.

Bruner as psychologist and as philosopher

In his psychology, Bruner has always sought a judicious balance between conceptual and empirical considerations. He appreciates very well that pictures of the mind which issue from conceptual reflection, however compelling they may seem, must be faithful to the real life of the mind, while recognizing that bold empirical theories of mind must carry conviction in light of our deeply entrenched concepts of what mind is. Let us examine some examples of Bruner at work.

Consider Bruner's contribution to the nativist–empiricist debate about language, one of the great driving forces in developmental psycholinguistics over the past generation. Chomsky first mounted his attack on the behaviourist view of language development with his famous 'poverty of the stimulus' argument. According to this rationalist credo, we can only explain how, as Stephen Pinker puts it, 'children's grammar explodes into adultlike complexity in so short a time' if we credit children with innate knowledge of all the possible forms that grammar can take (Pinker, 1994: 112). Here we have a primarily conceptual argument to the conclusion that:

> Language is not a cultural artifact that we learn the way we learn to tell time.... Instead, it is a distinct piece of the biological makeup of our brains. Language is a complex, specialized skill, which develops in the child spontaneously, without conscious effort or formal instruction, is deployed without awareness of its underlying logic, is qualitatively the same in every individual, and is distinct from more general abilities to process information or behave intelligently. (Pinker, 1994: 18)

Nativists sought to find empirical support for this position by appeal to the 'degeneracy of the data' argument,[2] various language 'universals',[3] the apparent invariance of the steps through which all children proceed in the acquisition of language, and the supposed existence of structure/functional correlations revealed by aphasias and specific language disorders. Yet, despite the force of these considerations, opponents of nativism found them too heavily informed by the framework they were invoked to justify. Paradoxically, what made nativism the dominant force in psycholinguistics was the fact that it provoked a serious response that was sympathetic to empiricism; namely, Bruner's work in the 1960s on the growth of skills, and in the 1970s on scaffolding theory.

Scaffolding theory – the idea that effective caregivers carefully monitor and adjust the amount of support they provide as a child begins to master language (and other) practices – thus affords an excellent illustration of Bruner enriching and revising powerful conceptual arguments by sensitive empirical observation. Through careful examination of the real life of language learning, Bruner arrived at the fundamentally interactionist picture of human development which has informed all of his later work. And once supplemented by a plausible account of the reality of language learning, the nativist paradigm took on a much more human, and more plausible, look.

Bruner's interactionism was not just a happy corrective to Chomsky's formalism. It was equally relevant to Piaget's massively influential views of cognitive development. Piaget's work could hardly be accused of being insensitive to empirical considerations. Nevertheless, Bruner was quick to diagnose how Piaget's theories were in the grip of entrenched conceptual presumptions that rendered them blind to the real context of development. Bruner wrote:

> The world is a quiet place for Piaget's growing child. He is virtually alone in it, a world of objects that he must array in space, time and causal relationships. He begins his journey egocentrically and must impose properties on the world that will eventually be shared with others. But others give him little help. The social reciprocity of infant and mother plays a very small role in Piaget's account of development. And language gives neither hints nor even a means of unravelling the puzzles of the world to which language applies. Piaget's child has one overwhelming problem: to bring the inner representations of mind into equilibrium with the structures of experience. Piaget's children are little intellectuals, detached from the hurly-burly of the human condition. (1983b: 138)

Such a view of children is not only unfaithful to the real circumstances of their development; it also distorts the theoretical options open to us in portraying the child's cognitive growth. For so long as the child is seen as acquiring concepts, learning a language, or building a conception of the world, by hypothesis formation, we will feel compelled to represent the child as already endowed with the wherewithal to construct and assess those hypotheses. Thus, the kind of 'intellectualism' we see in Piaget, and which is yet more evident in Chomsky's rationalism, significantly constrains the way we can represent the potential efficacy of the child's interaction with her social environment.

Bruner's interactionism, then, provided an important alternative to Chomskian and Piagetian orthodoxies. As we noted above, Bruner's scaffolding theory was seen – and was presented by Bruner himself – as a complement to the generativist paradigm, one which promised to enhance nativism with a realistic account of how language is actually acquired. What made Bruner's approach especially distinctive was his emphasis on a Vygotskian view of linguistic socialization. The Vygotskian picture, however, has two important features. First, for a Vygotskian, language and culture cannot be conceptually separated from one another: culture is the medium of language and language the vehicle of culture. Second, Vygotsky rejects the idea that the child's cognitive development proceeds through hypothesis formation. Many constituents of the child's intellectual powers are absorbed or appropriated from the culture rather than 'deduced' by the child through some form of ratiocination. These themes are not especially prominent in Bruner's early uses of Vygotsky, but they become increasingly evident in Bruner's most mature writings. It is for this reason, among others, that several contributors to this volume suggest that Bruner's efforts to complement Chomskian conceptions in fact undermine them. By teaching us to attend to the complex interactional factors involved in children's linguistic enculturation, Bruner reveals insurmountable weaknesses in nativist conceptions of language acquisition and in the whole generativist framework.

An excellent example of Bruner deploying primarily conceptual arguments against a scientific paradigm is found in the opening chapter of *Acts of Meaning* (1990), where Bruner targets the legacy of the cognitive revolution. As we noted above, Bruner argues that the cognitive revolutionaries – himself among them – aspired to oust the prevailing behaviourist orthodoxy by placing the concept of meaning at the centre of psychology. Their aim was

> to discover and to describe formally the meanings that human beings created out of their encounters with the world, and then to propose hypotheses about what meaning-making processes were implicated. [The cognitive revolution] focused upon the symbolic activities that human beings employed in constructing and making sense not only of the world, but of themselves. Its aim was to prompt psychology to join forces with its sister interpretative disciplines in the humanities and in the social sciences. (Bruner, 1990: 2)

But this noble project was undermined as cognitive psychologists became obsessed with computational models of the mind. Behaviourist talk of 'stimulus' and 'response' was succeeded by the equally one-dimensional view of minds as 'information processors'. And, in time, the behaviourists' yearning to replace our ordinary psychological vocabulary with a scientifically respectable language resurfaced in eliminativist critiques of folk psychology.

Bruner concludes that cognitivism is fraught with the same dehumanizing scientism as the behaviourism it aspired to destroy. Meaning is not a by-product of formal processing, but something 'made' or 'constructed' by real, embodied people, situated in a shared culture. Thus, psychology cannot concern itself simply with what goes on in the heads of individuals:

> It is man's participation in culture and the realization of his mental powers through culture that make it impossible to construct a human psychology on the basis of the individual alone.… To treat the world as an indifferent flow of information to be processed by individuals each on his or her own terms is to lose sight of how individuals are formed and how they function. (Bruner, 1990: 12)

We must therefore aspire to understand mind and self as aspects of a social world, which is neither an 'aboriginal reality' nor a projection of individual minds, but something essentially 'transactional'. Thus, Bruner rests his argument for cultural psychology on fundamentally conceptual premisses. A plausible psychology must respect our concepts of mind and meaning and the whole folk psychological idiom which human beings use to interpret their behaviour. Only then will it be possible for psychology to understand the life of the mind.

Our examples illustrate Bruner's adeptness with both empirical and conceptual arguments. But it is not just that Bruner appreciates the need to strike an appropriate balance between, as it were, speculation and observation. More than this, his work shows the artificiality of the very distinction between 'philosophical' and 'psychological' approaches to the study of the mind. Indeed, Bruner's attitude affirms Piaget's conviction that there really is 'no sharp division between scientific and philosophical problems' (Piaget, 1965: 18), for Bruner has always been guided by the idea that the study of the mind demands a *unity* of, on the one hand, conceptual enquiry sensitive to empirical findings and, on the other, empirical enquiry informed by constructive speculation about its conceptual orientation and foundations.

In both our examples, Bruner attacks individualist and formalist approaches to language and mind and advances a vision of psychology as a human science which pays due attention to the cultural context of our mental lives. It is important, however, that Bruner does not dismiss the idea of scientific psychology. He writes:

> I would like to urge an end to the kind of 'either-or' approach to the question of what psychology should be in the future, whether it should be entirely biological, exclusively computational, or monopolistically cultural. (1996: 160)

Bruner sees himself as enriching, supplementing and correcting the aspirations of scientific psychology, rather than as rejecting his opponents' approaches outright. He remains an advocate of cognitive science, just so long as it employs methods appropriate to its subject. Cultural psychology is thus not at odds with scientific psychology. On the contrary, Bruner concludes *The Culture of Education* with the words:

> The dilemma in the study of man is to grasp not only the causal principles of his biology and his evolution, but to understand these in light of the interpretive processes involved in meaning making. To brush aside the biological constraints on human functioning is to commit hubris. To sneer at the power of

> culture to shape man's mind and to abandon our efforts to bring this power under human control is to commit moral suicide. A well-wrought psychology can help us avoid both these disasters. (1996: 184–5)

Reconciliation or (counter)-revolution?

An advocate of cognitive science might complain that Bruner's reconciliatory tone is disingenuous. After all, the whole point of *Acts of Meaning* is to assert a distinction between causal and interpretative modes of explanation and to argue for the autonomy of the latter. It follows that, for example, causal accounts of brain functioning may help explain the preconditions of mind, but brain processes are enabling conditions of our mental life, they do not constitute it. The account of what constitutes our mental life must be interpretative-hermeneutical rather than causal. Thus Bruner sets severe a priori constraints on what scientific psychology can be.

Bruner would no doubt resist this description of his approach. The distinction between interpretative-hermeneutical and causal-explanatory modes of thought has a long pedigree. Bruner is fond of citing Dilthey's division between *Natur*- and *Geisteswissenschaften*, but the origins of the distinction lie in Kant's contrast between the causal and the rational – the realms of necessity and of spontaneity. Many modern thinkers embrace the distinction in one form or another. Indeed, it is widely recognized that the criteria we use to ascribe intentional states to subjects are very different in kind from those we deploy when determining the properties of physical objects and events, and hence that our mentalistic and physicalistic forms of talk represent two distinct, and in a sense incommensurable, modes of description and explanation. When we use the former, we are involved in making sense – or interpreting – the behaviour of subjects according to norms of rationality (we figure out what someone believes by asking what it would *make sense* for them to hold true in light of what we suppose them already to believe, etc.); while deploying the latter, we explain material goings-on by subsuming them under physical laws. This is almost a commonplace in contemporary philosophy of mind, accepted both by proponents of scientific psychology and by its detractors. It is not, after all, that the interpretative mode is 'primary', for which discourse is superior depends on what it is one seeks to explain. If you want to know how a steam engine functions, or how global warming is related to climate change, you had best deploy scientific modes of explanation. If you seek to understand why your friend suspects her husband of infidelity, or why Raskolnikov committed murder, you had best deploy the interpretative mode. Such a position – which is so widely accepted – can hardly be portrayed as an a prioristic assault on scientific psychology!

Bruner's critic would not be satisfied with this response. First, the distinction is often invoked to rule out the idea that a scientific psychology can cast its explanations in terms of the states and properties that figure in our folk psychology. Yet Bruner is resolute that folk psychology is ineliminable. Second, there is a sense in which Bruner, despite his protestations, does privilege the interpretative mode of thought. The idea that the appropriateness of a mode of explanation depends on what one seeks to explain is quite compatible with the view that certain modes of explanation are more fundamental than others. Some modes of thought, it might be argued, get at 'things as they really are'. So naturalists who deploy the distinction between causal and mentalistic modes of explanation usually start from the idea that the causal-explanatory strategies of science reveal to us the world as it is. Daniel Dennett, for example, accords the deliverances of science ontological supremacy and asks how we can accommodate mental phenomena within the world as science portrays it. Our psychological modes of talk are represented as essentially (folk-) theoretical devices for explaining and predicting the behaviour of biological (and hence ultimately physical) systems, and the states psychological talk invokes are considered to be abstractions or posits rather than 'real' entities. On such a view, the interpretative mode figures in a story about the construction of the mental, and the mental must be a construct, since, given Dennett's physicalistic starting point, nothing like mind, as we typically understand it, could be straightforwardly part of nature.

In contrast, some thinkers treat the interpretative mode as paramount. They argue that science itself must be seen as a mode of interpretation; as one among the modes in which rational beings make sense of their world. The deliverances of the scientific conception, however compelling, cannot undermine our confidence in the reality of mental phenomena and intentionalistic modes of explanation, for the very power of scientific conceptions is, after all, a matter of how certain sorts of explanations meet certain norms of enquiry in a way that makes them rationally compelling. We must not forget that the scientific conception of the world is a product of our mental powers. Science doesn't give us the world; it gives us compelling representations of reality. Thus, the point of view from which explanations are cast is an ineliminable dimension of scientific enquiry. It cannot be that the deliverances of science render the mental so problematic that we are reduced to 'finding a place' for mind within nature by portraying it as *merely* a mode of interpreting or describing certain physical systems. To think that way is to focus on the results of scientific enquiry while forgetting its presuppositions.

Bruner is undoubtedly a thinker of the second kind. His point of departure is the perspective of intelligence rather than conceptions of nature. This is why, Bruner's critic will conclude, he has no hesitation in invoking conceptual arguments to keep scientific psychology in its place, for he is wedded to the idea that psychology must respect deeply entrenched elements in our conception of ourselves. But if this is a desideratum of cultural psychology, it must be an obstacle to reconciliation with a full-bloodedly naturalistic cognitive science.

We might also observe that Bruner's emphasis on reconciliation is also unlikely to impress those who welcome cultural psychology as a powerful stand against scientism. Indeed, several of the contributors to this volume argue that Bruner is too quick to portray his position as a modification of, or supplement to, mainstream cognitive science. His spirit of compromise blinds him to the really radical consequences of his own position, which is built upon premisses that entail, not a return to the original ethos of the cognitive revolution, but its outright rejection. This kind of criticism is a theme in the chapters by Geertz, Harré, Shotter and Taylor, among others. Though these authors offer very different suggestions about the form 'post-cognitive' psychology should take, they share the conviction that Bruner's insights expose conceptual confusions at the very heart of cognitive science as it is usually conceived.

So, Bruner's attempts at reconciliation threaten to satisfy no one. While some see him as wielding a priori arguments to restrain empirical enquiry, others accuse him of not taking those arguments far enough to initiate a really radical alternative to the entrenched orthodoxies.

Style and substance in Bruner's thought

Is this a fair assessment? And if it is, where does that leave our claim that Bruner's work contains a subtle and sophisticated interplay of conceptual and empirical strategies? There is no doubt that in Bruner's hands the division between causal-explanatory and interpretative-hermeneutical forms of thought threatens to belie his aspiration to reconcile cultural psychology and cognitive science. For if there is a basic distinction between how we explain physical goings-on and how we interpret human behaviour, psychology will always be internally divided. The explanation of the causal processes that underlie human mentality will proceed in ways that are fundamentally incommensurable with our interpretative strategies for the explanation of intelligent behaviour.

Does this set Bruner irreconcilably at odds with contemporary naturalism? Certainly, Bruner's position conflicts with the idea that all that is natural can be explained by appeal to causal laws. He must advance a broader conception of the natural which encompasses the 'second nature' we acquire through the appropriation of culture, and which can only be understood by interpretative means (cf. McDowell, 1994: chs 4–5). But this, it seems to us, is a strength of his position rather than a weakness.

However, what is wrong with the objection developed in the last section is that it implies that Bruner's vision of cultural psychology rests on dogmatic a priorism. It is vital to appreciate that Bruner's distinction between modes of thought does not figure as an a priori truth established antecedent to empirical enquiry, but as a conceptual commitment that emerges precisely in confrontation with the facts.

This is best illustrated not by the letter of Bruner's psychology, but by its style. Consider his contribution to a symposium on 'theory of mind' which appeared in the journal *Human Development* (Bruner, 1995 (reprinted in Bruner, 1996: ch. 5)). In the lead paper, Janet Astington and

David Olson (the latter a contributor to this volume) argue that research on children's developing theories of mind offers the opportunity to integrate causal and hermeneutical approaches in a single naturalistic account. They grant that the ability to describe and explain behaviour in psychological terms involves hermeneutical skills of interpretation. That ability, however, is premissed upon the possession of concepts and other cognitive resources, the development of which proceeds through identifiable stages which can be traced by empirical enquiry and explained causally. Hence, 'theory of mind' promises to capture the acquisition and elaboration of meaning making in the causal-explanatory net (Astington and Olson, 1995).

It is instructive to consider Bruner's response to this argument. Rather than trying to undermine Astington and Olson's ambitions on the grounds, say, that they misconstrue the conceptual distinction between explanation and interpretation, he adopts a distinctly particularist approach. He concedes that the circumstances in which children learn to deploy mentalistic notions are open to empirical scrutiny in which testable hypotheses can be subjected to experimental verification. But, he argues, this hardly constitutes a synthesis of causal and interpretative approaches. First, it is not clear that the explanation of the development of the child's theory of mind is straightforwardly causal, for the subjectivity of others figures as a crucial precondition of that development. Development is possible precisely because the infant is treated by others as a minded, self-conscious being, even when she lacks a conception of mind in the full sense. Even if this process exhibits regularities that can be codified, it is unlikely that we can see the efficacy of the subjectivity of others in causal terms. Moreover, to give a causal explanation of the origin of a capacity is not to give a causal account of the capacity itself. A causal explanation of what must be in place for a child to 'mind read' is not a causal account of what constitutes 'mind reading'. It is one thing to have an explanation of the enabling conditions of a certain capacity, another to have a constitutive account of the capacity itself. The hermeneutical character of the latter remains undiminished by the availability of a causal account of the former. Finally, Bruner remarks that we should not be too confident that we really know what 'thought' is. We speak as if our 'folk psychology' was a theory designed to get at discrete, yet unobservable, mental entities that exist independently of our modes of description and understanding. But, in fact, the terms of this folk theory refer to entities that cannot be understood without essential reference to the character of our psychological discourse as a whole, to the cultural context of its use and the perspective of those who use it. That is to say, the very terms in which we propose to base this putatively causal account have a life only within our practices of interpretation and meta-interpretation.

Such considerations bring Bruner to the familiar point that the causal-explanatory and the interpretative-hermeneutical are two incommensurable modes of knowledge. It is crucial, however, that the distinction emerges as the *conclusion* of sustained reflection upon empirical considerations and conceptual connections. It sometimes happens that, when we examine the facts (in light of our best conceptions), we feel that we have no option but to embrace certain deep truths, that there is simply *nothing else to think*. The distinction between Bruner's two modes of thought issues from a judgement of this kind. It is dictated by the object of enquiry, though Bruner recognizes, of course, that our conception of the object is influenced by our present culture of enquiry and that even our entrenched conceptual distinctions are mutable, for circumstances we do not now envisage may change our perspective in unanticipated ways. Bruner, to his credit, remains an out and out fallibilist.

Thus, Bruner's cultural psychology is not premissed on an 'in principle' distinction between the two modes of thought. The force of the distinction is not metaphysical. Of course, Bruner has always been a conceptually oriented psychologist. What captures his imagination most are compelling representations of the mind, or, perhaps better, of the human condition. He evidently enjoys speculative reflection in the best sense of the term, and this attracts him to philosophy, literary theory, cultural criticism and other fields. And, as time has gone on, his interest in empirical research has been largely for the theoretical pictures that it yields. But Bruner has never ceased to recognize that all theoretical pictures of the mind must have empirical content. After all, mind is a real presence in the world. There is a way things are for minded beings which we can only find out by *encountering* minds. Matters are complicated, of course, by the essential reflexivity of psychological enquiry. We engage with minds in a way in which we do not engage with other objects. Moreover, the nature of mind is a consequence, at least in part, of how mind is conceptualized. For Bruner, mind is not a substantial presence, but an artefact of our self-understanding, and for the theoretical pictures we paint in psychology to carry conviction, we must be able to recognize ourselves in them. In psychology, the mind seeks to understand itself. It is this, rather than some reactionary conception of a priori 'analysis', that gives speculative, conceptual enquiry a vital role in any genuine psychology.

Conclusion: Bruner the pragmatist

We have argued that in the manner of his psychological thinking, Bruner provides a model of the harmonious interplay of conceptual and empirical strategies of enquiry. Bruner is all too aware that conceptual reflection cannot yield an ordnance survey map of platonic heaven, just as empirical research does not read the book of nature. No scientific theory can render itself immune from conceptual refutation and no conceptual speculation can avoid the threat of changing intuitions. We are left to tack back and forth, as judiciously as we can, between sensitive empirical observation and careful reflection on the concepts we deploy in making sense of what we observe.

This feature of Bruner's style situates him centrally within the tradition of American pragmatism, the pragmatism of Peirce, James, and especially Dewey. And like his predecessors, Bruner's guiding light is *practice*. What keeps Bruner's psychology down-to-earth is not so much the promise of testing his theories by experimental means, but the intention that his views will inspire creative educational policies, more refined self-awareness and better ways of living. This is the ultimate court in which theoretical conceptions, whether they issue from empirical generalization or armchair speculation, face the tribunal of experience. This erudite, practice-oriented fallibilism, combined with infectious enthusiasm for learning and unflagging epistemological optimism is very much Bruner's way with ideas. It is the core of his engagingly humanistic approach to psychology, an approach which is, at the same time, ebullient, fun and profoundly moral. It is a towering example to all who study the life of the mind.

Notes

1 A *Festschrift* for Bruner already exists: Olson, 1980.

2 According to this argument, the empiricist contention that children learn linguistic structure from their caregivers is belied by the fact that the language to which a child is exposed is full of grammatically incorrect sentences, slips of the tongue, incomplete sentences, slang, metaphors and homonyms.

3 For example, every human race has language, every human being (except those with brain damage) who has a normal exposure to language acquires language regardless of IQ or other variables, and all languages are putatively built upon the same principles (e.g., 'structure-dependence').

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1

IMBALANCING ACT: JEROME BRUNER'S CULTURAL PSYCHOLOGY

Clifford Geertz

Rethinking the cognitive revolution

What does one say when one says 'psychology'? James, Wundt, Binet or Pavlov? Freud, Lashley, Skinner or Vygotsky? Kohler, Lewin, Lévy-Bruhl, Bateson? Chomsky or Piaget? Daniel Dennett or Oliver Sacks? Herbert Simon? Since it was truly launched as a discipline and a profession in the last half of the nineteenth century, mainly by Germans, the self-proclaimed 'science of the mind' has not just been troubled with a proliferation of theories, methods, arguments and techniques. That was only to be expected. It has also been driven in wildly different directions by wildly different notions as to what it is, as we say, 'about' – what sort of knowledge, of what sort of reality, to what sort of end it is supposed to produce. From the outside, at least, it does not look like a single field, divided into schools and specialities in the usual way. It looks like an assortment of disparate and disconnected enquiries classed together because they all make reference in some way or other to something or other called 'mental functioning'. Dozens of characters in search of a play.

From inside it doubtless looks a bit more ordered, if only because of the byzantine academic structure that has grown up around it (the American Psychological Association has 49 divisions), but surely no less miscellaneous. The wide swings between behaviourist, psychometric, cognitivist, depth-psychological, topological, developmentalist, neurological, evolutionist and culturalist conceptions of the subject have made being a psychologist an unsettled occupation, subject not only to fashion, as are all the human sciences, but to sudden and frequent reversals of course. Paradigms, wholly new ways of going about things, come along not by the century, but by the decade; sometimes, it almost seems, by the month. It takes either a preternaturally focused, dogmatic individual, who can shut out any ideas but his or her own, or a mercurial, hopelessly inquisitive one, who can keep dozens of them in play at once, to remain upright amidst this tumble of programmes, promises and proclamations.

There are, in psychology, a great many more of the resolved and implacable, *esprit de système* types (Pavlov, Freud, Skinner, Piaget, Chomsky), than there are of the agile and adaptable, *esprit de finesse* ones (James, Bateson, Sacks). But it is among the latter that Jerome Bruner clearly belongs. In a breathless, lurching, yet somehow deeply consecutive career spanning nearly 60 years, Bruner has brushed against almost every line of thought in psychology and transformed a number of them.

That career began at Harvard in the 1940s, during the heyday of behaviourism, rat-running, the repetition of nonsense syllables, the discrimination of sensory differences, and the measurement of galvanic responses. But, dissatisfied with the piling up of experimental 'findings' on peripheral matters (his first professional study involved conditioning 'helplessness' in a rat imprisoned on an electrified grill), he quickly joined a growing band of equally restless colleagues, within psychology and without, to become one of the leaders of the so-called 'cognitive revolution'.

By the late 1950s, this revolution was underway, and 'bringing the mind back in' became the battle cry for a whole generation of psychologists, linguists, brain modellers, ethnologists and computer scientists, as well as a few empirically minded philosophers. For them, the primary objects of study were not stimulus strengths and response patterns, but mental actions – attending, thinking, understanding, imagining, remembering, feeling, knowing. With a like-minded colleague, Leo Postman, Bruner launched a famous series of 'New Look' perception experiments to demonstrate the power of mental selectivity in seeing, hearing and recognizing something. Poorer children see the same coin as larger than richer ones do; college students are either very much slower ('defensive') or very much quicker ('vigilant') to recognize threatening words than they are to recognize unthreatening ones. With two of his students, he carried out a landmark study of abstract reasoning. How do people, in fact rather than in logic, test their hypotheses? How do they decide what is relevant to explanation and what is not? And in 1960, he and the psycholinguist George Miller, another restless soul, founded Harvard's interdisciplinary Center for Cognitive Studies, through which virtually all of the leading figures in the field, established or in the making, passed and which set off an explosion of similar centres and similar work both in the US and abroad. 'We certainly generated a point of view, even a fad or two', Bruner wrote of his and his colleagues' work during this period in his (as it turns out, premature) autobiography, *In Search of Mind*. 'About ideas, how can one tell?' (1983: 126).

After a while, Bruner himself became disenchanted with the cognitive revolution, or at least with what it had become. At the beginning of his 'goodbye to all that' proclamation of a new direction, *Acts of Meaning*, Bruner writes:

> That revolution was intended to bring 'mind' back into the human sciences after a long cold winter of objectivism.... [But it] has now been diverted into issues that are marginal to the impulse that brought it into being. Indeed, it has been technicalized in a manner that even undermines that original impulse. This is not to say that it has failed: far from it, for cognitive science must surely be among the leading growth shares on the academic bourse. It may rather be that it has become diverted by success, a success whose technological virtuosity has cost dear. Some critics ... even argue that the new cognitive science, the child of the revolution, has gained its technical successes at the price of dehumanizing the very concept of mind it had sought to reestablish in psychology, and that it has thereby estranged much of psychology from the other human sciences and the humanities. (1990: 1)

In saving the cognitive revolution from itself, distancing it from high-tech reductionism (brain is hardware, mind is software, thinking is the software processing information on the hardware), Bruner has raised, over the past decade or so, yet another banner heralding yet another dispensation: 'cultural psychology'. What now comes to the centre of attention is the individual's engagement with established systems of shared meaning, with the beliefs, the values, and the understandings of those already in place in society as he or she is thrown in amongst them. For Bruner, the critical 'test frame' for this point of view is education – the field of practices within which such engagement is, in the first instance, effected. Rather than a psychology that sees the mind as a programmable mechanism, we need one that sees it as a social achievement. Education

> is not simply a technical business of well-managed information processing, nor even simply a matter of applying 'learning theories' to the classroom or using the results of subject-centered 'achievement testing'. It is a complex pursuit of fitting a culture to the needs of its members and their ways of knowing to the needs of the culture. (Bruner, 1996: 43)

Bringing the mind into focus

Bruner's concern with education and educational policy dates from the studies of mental development in infants and very young children that, in his growing resistance to machine cognitivism, he began to carry out in the mid-1960s, just – such are the workings of the *Zeitgeist* – as the Head Start programme was coming grandly into being. These studies led him to an 'outside-in' view of such development, one which concerns itself with 'the kind of world needed to make it possible to use mind (or heart!) effectively – what kinds of symbol systems, what kinds of accounts of the past, what arts and sciences ...' (Bruner, 1996: 9). The unfolding of the critical features of human thinking, joint attention with others to objects and actions, attribution of beliefs, desires and emotions to others, grasping the general significance of situations, a sense of selfhood – what Bruner calls 'the entry into meaning' – begins very early in the development process, prior not just to formal schooling but to walking and the acquisition of language:

> Infants, it turned out, were much smarter, more cognitively proactive rather than reactive, more attentive to the immediate social world around them, than had been previously suspected. They emphatically did not inhabit a world of 'buzzing, blooming confusion': they seemed to be in search of predictive stability from the very start. (Bruner, 1996: 71–2)

The Head Start programme began with a rather different – in some ways complementary, in others contrastive – view of early development based on a rather different set of scientific investigations: those showing that laboratory animals raised in 'impoverished environments', ones with few challenges and reduced stimulation, did less well than 'normals' on such standard learning and problem-solving tasks as maze-running and food-finding. Transferred, more metaphorically than experimentally, to schooling and to schoolchildren, this led to the so-called 'cultural deprivation hypothesis'. Children raised in an 'impoverished' cultural environment, in the ghetto or wherever, would, for that reason, do less well in school. Hence the need for corrective action to enrich their environment early on, before the damage was done. Hence Head Start.

Aside from the fact that correcting for 'cultural deprivation' depends on knowing what such deprivation consists of (what it has most often been taken to consist of is departure from the standards of an idealized, middle-class, 'Ozzie and Harriet' American culture), such an approach seems to assume that 'cultural enrichment' is a good to be provided to the deprived child by the wider society, like a hot lunch or a smallpox injection. The child is seen to be lacking something, not seeking something; regarded as receiving culture from elsewhere, not as constructing it *in situ* out of the materials and interactions immediately to hand. Bruner was a sometime adviser to Head Start, and he is still a defender of its very real successes and its possibilities for extension and reform (it is, after all, an 'outside-in' programme). But he argues that the results of his sort of research into the mental development of children – grown by now into a field in itself, turning up more and more evidence of the conceptual powers of children – renders the 'deprivation' approach obsolete. Seeing even the infant and the preschooler as active agents bent on mastery of a particular form of life, on developing a workable way of being in the world, demands a rethinking of the entire educational process. It is not so much a matter of providing something the child lacks, as enabling something the child already has: the desire to make sense of self and others, the drive to understand what the devil is going on.

For Bruner, the critical enabling factor, the thing that brings the mind to focus, is culture – 'the way of life and thought that we construct, negotiate, institutionalize, and finally (after it is all settled) end up calling "reality" to comfort ourselves' (1996: 87). Any theory of education that hopes to reform it, and there hardly is any other kind, needs to train its attention on the social production of meaning. The terms upon which society and child – the 'reality' already there and the scuttling intellect thrust bodily into it – engage one another are in good part worked out in the classroom, or at least they are in our school-conscious society. It is there that mentality is most deliberately fashioned, subjectivity most systematically produced, and intersubjectivity – the ability to 'read other minds' – most carefully nurtured. In the favourable case, not perhaps entirely common, the child, 'seen as an epistemologist as well as a learner', moves into an ongoing community of discoursing adults and chattering children where 'she … gradually comes to appreciate that she is acting not directly *on* "the world" but on beliefs she holds *about* that world' (1996: 57, 49).

This turn towards concern with the ways in which the understandings abroad in the larger society are used by the schoolchild to find her feet, to build up an inner sense of who she is, what others are up to, what is likely to happen, what can be done about things, opens Bruner's 'cultural psychology' to a host of issues normally addressed by other disciplines – history, literature, law, philosophy, linguistics, and especially that other hopelessly miscellaneous and inconstant science, anthropology. Such a psychology, rather like anthropology, has an eclectic perspective and a vast ambition built directly into it. It seems to take all experience for its object, to draw on all scholarship for its means. With so many doors to open, and so many keys with which to open them, it would be folly to try to open all of them at once – that way lies knowing less and less about more and more. Sensitive as always to the practicalities of research, the door Bruner wants to open (not altogether surprisingly, given recent developments in 'discourse theory', 'speech-act analysis', 'the interpretation of cultures', and 'the hermeneutics of everyday life') is *narrative*.

Telling stories, about ourselves and about others, to ourselves and to others, is 'the most natural and the earliest way in which we organize our experience and our knowledge' (Bruner, 1996: 121). But you would hardly know it from standard educational theory, trained as it is upon tests and recipes:

> It has been the convention of most schools to treat the art of narrative – song, drama, fiction, theater, whatever – as more 'decoration' than necessity, as something with which to grace leisure, sometimes even as something morally exemplary. Despite that, we frame the accounts of our cultural origins and our most cherished beliefs in story form, and it is not just the 'content' of these stories that grip us, but their narrative artifice. Our immediate experience, what happened yesterday or the day before, is framed in the same storied way. Even more striking, we represent our lives (to ourselves as well as to others) in the form of narrative. It is not surprising that psychoanalysts now recognize that personhood implicates narrative, 'neurosis' being a reflection of either an insufficient, incomplete, or inappropriate story about oneself. Recall that when Peter Pan asks Wendy to return to Never Never Land with him, he gives as his reason that she could teach the Lost Boys there how to tell stories. If they knew how to tell them, the Lost Boys might be able to grow up. (Bruner, 1996: 40)

Growing up among narratives – one's own, those of teachers, schoolmates, parents, janitors, and various other sorts of what Saul Bellow once mordantly referred to as 'reality instructors' – is the essential scene of education. ‘We live in a sea of stories’, as Bruner puts it (1996: 147). Learning how to swim in such a sea, how to construct, understand, classify, check out, see through and use stories to find out how things work or what they come to, is what the school, and beyond the school the whole ‘culture of education’, is, at base, all about. The heart of the matter, what the learner learns whatever the teacher teaches, is ‘that human beings make sense of the world by telling stories about it – by using the narrative mode for construing reality’ (Bruner, 1996: 130). Tales are tools, ‘instrument[s] of mind on behalf of meaning making’ (1996: 41).

Constructing a cultural psychology

Bruner’s most recent work is, then, dedicated to tracing the implications of this view of narrative as ‘both a mode of thought and an expression of a culture’s world view’ (Bruner, 1996: xiv). He has launched enquiries into the teaching of science, into ‘folk pedagogy’, into the collaborative nature of learning, and into the child’s construction of ‘a theory of mind’ to explain and understand other minds. Autism as the inability to develop such a theory of mind, the formal features of narrative, culture as praxis, and the respective approaches to education of Vygotsky, Piaget and Pierre Bourdieu (all related to Bruner’s own, but also in tension with it), have all been discussed, at least in passing. So have recent developments in primatology, cross-cultural studies of education, IQ testing, ‘metacognition’ (‘thinking about one’s thinking’), relativism and the uses of neurology. It is all rather on the wing; a wondrous lot goes by wondrously fast.

This is not so serious a fault, if it is a fault at all, in what is still a series of forays designed to open up a territory rather than to chart and settle it. But it does leave even the sympathetic critic at a bit of a loss as to where it is all going, what ‘cultural psychology’ amounts to as a field among fields, a continuing enterprise with a budget of issues and an agenda for confronting them. One can, of course, get something of a sense of this by consulting Bruner’s dozens upon dozens of technical investigations or by hunting down his even more numerous citations to studies by colleagues.

But since most of this ‘literature’, wrapped in statistics and enfolded in protocols, is scattered through professional journals and disciplinary symposia, few besides specialists are likely to find the patience for such a task. Genuine treatises, more summary, and thus more accessible, synthesizing works, authored by students, co-workers and followers of Bruner, are beginning to appear in increasing numbers, from which one can get a somewhat clearer picture of where the whole enterprise is at the moment and what progress it is making.[1] And in the final section of his most recent book, a section called, with uncertain surety, ‘Psychology’s Next Chapter’, Bruner himself undertakes to lay out the directions in which cultural psychology should move and to describe how it should relate itself to other approaches to ‘the study of mind’. As usual, his attitude is conciliatory, eclectic, energetic, upbeat:

> Can a cultural psychology … simply stand apart from the kind of biologically rooted, individually oriented, laboratory dominated psychology that we have known in the past? Must the more situated study of mind-in-culture, more interpretively anthropological in spirit, jettison all that we have learned before? Some writers … propose that our past was a mistake, a misunderstanding of what psychology is about.… [But] I would like to urge an end to [an] 'either-or' approach to the question of what psychology should be in the future, whether it should be entirely biological, exclusively computational, or monopolistically cultural. (Bruner, 1996: 160)

He wants to show how

> psychology can, by devoting its attention to certain critical topics … illustrate the interaction of biological, evolutionary, individual psychological, and cultural insights in helping us grasp the nature of human mental functioning. [The] 'next chapter' in psychology [will be] about 'intersubjectivity' – how people come to know what others have in mind and how they adjust accordingly … a set of topics … central to any viable conception of a cultural psychology. But it cannot be understood without reference to primate evolution, to neural functioning, and to the processing capacities of minds. (Bruner, 1996: 161)

This is all very well, the sort of balanced and reasonable approach that softens contrasts, disarms enemies, skirts difficulties and finesses hard decisions. But there remains the sense that Bruner is underestimating the explosiveness of his own ideas. To argue that culture is socially and historically constructed, that narrative is a primary (in humans perhaps *the* primary) mode of knowing, that we assemble our 'selves' out of materials lying about in the society around us and develop 'a theory of mind' to comprehend the selves of others, that we act not directly on the world but on beliefs we hold about the world, that from birth on we are all active, impassioned 'meaning makers' in search of plausible stories, and that 'mind cannot in any sense be regarded as "natural" or naked, with culture thought of as an add-on' – such a view amounts to rather more than a mid-course correction (Bruner, 1996: 171). Taken all in all, it amounts to adopting a position that can fairly be called radical, not to say subversive. It seems very doubtful that such views and others connected with them – perspectivism, instrumentalism, contextualism, anti-reductionism – can be absorbed into the ongoing traditions of psychological research (or indeed into the human sciences generally) without causing a fair amount of noise and upheaval. If 'cultural psychology' does gain ascendancy, or even serious market share, it will disturb a lot more than pedagogy.

For it is in fact the case that not only is cultural psychology evolving rapidly, gathering force and amassing evidence, but so as well are its two most important rivals, or anyway alternatives – information processing cognitivism and neurobiological reductionism. The introduction into cognitivism of distributive parallel processing (which Bruner dismisses at one point as but a 'veiled version' of behaviourist associationism) and computer-mediated experimentalism has given it something of a second wind. A technology-driven spurt in brain research, the extension of evolutionary theory to everything from morality to consciousness, the emergence of a whole range of post-Cartesian philosophies of mind, and, perhaps most important, the dawning of the age of the absolute gene, have done the same for biologism. In the face of all this, and of the moral and practical issues at stake, courteous, to-each-his-own dividing up of the territory does not look to be on the cards.

'Psychology's Next Chapter' is more likely to be tumultuous than irenic as computational, biological and cultural approaches grow in power and sophistication sufficiently to assure that they will have transformative impacts upon one another. The simple assertion that biology provides 'constraints' upon culture, as it does, and that computationally based cognitive science is incompetent to deal with 'the messiness of meaning making', as it is, will hardly suffice to resolve the deep issues that, by its very presence, cultural psychology is going to make unavoidable. Bringing so large and misshapen a camel as anthropology into psychology's tent is going to do more to toss things around than to arrange them in order. At the climax of what is surely one of the most extraordinary and productive careers in the human sciences, a career of continuous originality and tireless exploration, Bruner seems to be in the midst of producing a more revolutionary revolution than he altogether appreciates.

Navigating difference

Within anthropology, the clarity, the relevance, the analytic power, even the moral status of the concept of culture have been much discussed in recent years, to no very certain conclusion save that if it is not to be discarded as an imperialist relic, an ideological manoeuvre, or a popular catchword, as its various critics variously suggest, it must be seriously rethought. Giving it a central role in 'psychology's next chapter', as Bruner suggests, should do much to encourage such rethinking, as well as to extend similar questionings to the no less embattled concept of mind he wishes to conjoin with it. But it will hardly simplify things. To the abiding puzzles afflicting psychology – nature and nurture, top down and bottom up, reason and passion, conscious and unconscious, competence and performance, privacy and intersubjectivity, experience and behaviour, learning and forgetting – will be added a host of new ones: meaning and action, social causality and personal intention, relativism and universalism, and, perhaps most fundamentally, difference and commonality. If anthropology is obsessed with anything, it is with how much difference difference makes.

There is no simple answer to this question so far as cultural differences are concerned (though simple answers are often enough given, usually extreme). In anthropology, there is merely the question itself, asked and re-asked in every instance. To throw so singularizing a science in amongst such determinedly generalizing ones as genetics, information processing, developmental psychology, generative grammar, neurology, decision theory, and neo-Darwinism is to court terminal confusion in a realm – the study of mental activity – already well-enough obscured by imperial programmes, inimical world-views and a proliferation of procedures. What, in the days of Sartre, we would have called Bruner's 'project', implies a good deal more than adding 'culture' (or 'meaning', or 'narrative') to the mix. It implies, as he himself has said, confronting the world as a field of differences, 'adjudicating the different construals of reality that are inevitable in any diverse society' (Bruner, 1990: 95).

Trying to bring together, or (perhaps more carefully) to relate in a productive manner, everything from 'psychic universals' and 'story telling' to 'neural models' and 'enculturated chimpanzees', from Vygotsky, Goodman and Bartlett to Edelman, Simon and Premack (not to speak of Geertz and Lévi-Strauss!) obviously involves as much mobilizing differences as it does dissolving them, 'adjudicating' contrasts (not, perhaps, altogether the best word), rather than overriding them or forcing them into some pallid, feel-good ecumenical whole. It may just be that it is not the reconciliation of diverse approaches to the study of mind that is most immediately needed, a calming eclecticism, but the effective playing of them off against one another. If that miraculous cabbage, the brain itself, now appears to be more adequately understood in terms of separated processes simultaneously active, then the same may be true of the mind with which biologizers so often confuse it. History, culture, the body and the workings of the physical world indeed fix the character of anyone's mental life – shape it, stabilize it, fill it with content. But they do so independently, partitively, concurrently and differentially. They do not just disappear into a resultant like so many component vectors, or come together in some nicely equilibrated frictionless concord.

Such a view – that a useful understanding of how we manage to think must be one in which symbolic forms, historical traditions, cultural artefacts, neural circuits, environmental pressures, genetic inscriptions and the like operate coactively, often enough even agonistically – seems to be struggling towards more exact expression in recent work, at least in part stimulated by Bruner's own. Andy Clark's *Being There* (1997) is dedicated to nothing less than 'putting brain, body and world together again'. William Frawley's *Vygotsky and Cognitive Science* (1997) seeks 'to show that the human mind is both a social construct and a computational device as opposed to one or the other'. So far as culture – 'the symbolic systems that individuals [use] in constructing meaning' (Bruner, 1990: 11) – is concerned, what Clark calls 'the image of mind as inextricably interwoven with body, world and action' (1997: xvii), and Frawley, 'the mind in the world [and] the world … in the mind' (1997: 295), makes it impossible to regard it any longer as external and supplementary to the resident powers of the human intellect, a tool or a prosthesis. It is ingredient in those powers.[2]

The course of our understanding of mind does not, therefore, consist of a determined march towards an omega point where everything finally falls happily together; it consists of the repeated deployment of distinct enquiries in such a way that, again and again, apparently without end, they force deep-going reconsiderations upon one another. Constructing a powerful 'cultural psychology' (or a powerful psychological anthropology – not altogether the same thing) is less a matter of hybridizing disciplines, putting hyphens between them, than it is of reciprocally disequilibrating them. At a time when monomaniac, theory-of-everything conceptions of mental functioning, stimulated by local developments in neurology, genetics, primatology, literary theory, semiotics, systems theory, robotics or whatever, have come increasingly into fashion, what seems to be needed is the development of strategies for enabling Bruner's 'different construals of [mental] reality' to confront, discompose, energize and deprovincialize one another, and thus drive the enterprise erratically onward. Everything that rises need not converge: it has only to make the most of its incorrigible diversity.

The ways of doing this, of making disparate, even conflicting, views of what the mind is, how it works and how it is most profitably studied into useful correctives to one another's assurances, are, of course, themselves multiple – extremely difficult to devise, difficult to put in place once they are devised, and extremely susceptible, once they are put in place, to bringing on an academic version of a Hobbesean war. Again, so far as anthropology is concerned, what most positions it to contribute to such a task, and to avoid its pathological outcomes, is not its particular findings about African witchcraft or Melanesian exchange, and certainly not any theories it may have developed about universal necessities and the ingenerate logic of social life, but its long and intimate engagement with cultural difference and with the concrete workings of such difference in social life. Surveying contrasts, tracing their implications and enabling them somehow to speak to general issues is, after all, its *métier*.

Managing difference, or if that sounds too manipulative, navigating it, is the heart of the matter. As with all such enterprises, there are a good many more ways of getting it wrong than there are of getting it right, and one of the most common ways of getting it wrong is through convincing ourselves that we have got it right – consciousness explained, how the mind works, the engine of reason, the last word. Whitehead once remarked that we must build our systems and keep them open; but, given his own passion for completeness, certainty and holistic synthesis, he neglected to add that the former is a great deal easier to accomplish than the latter. The hedgehog's disease and the fox's – premature closure and the obsessive fear of it, tying it all up and letting it all dangle – may be equally obstructive of movement in the human sciences. But, 'in nature', as the positivists used to say, the one is encountered far more frequently than the other, especially in these days of high-tech tunnel vision.

One thing that is certain (if anything is certain when one comes to talk of such things as meaning, consciousness, thought and feeling) is that neither psychology's nor anthropology's 'next chapter' is going to be an orderly, well-formed sort of discourse, with beginning and middle neatly connected to end. Neither isolating rival approaches to understanding mind and culture in fenced communities ('evolutionary psychology', 'symbolic anthropology') nor fusing them into an inclusive whole ('cognitive science', 'semiotics'), is, in the long run, or even the medium, really workable – the one because it reifies difference and exalts it, the other because it underestimates its ubiquity, its ineradicability and its force.

The reason that the legalism 'adjudication' may not be the best term to signal the alternative to these ways of avoiding issues is that it suggests an 'adjudicator', something (or someone) that sorts things out, that reconciles approaches, ranks them, or chooses among them. But whatever order emerges in either mind or culture, it is not produced by some regnant central process or directive structure; it is produced by the play of … well, whatever it is that is, in the case, in play. The future of cultural psychology depends on the ability of its practitioners to capitalize on so turbulent and inelegant a situation – a situation in which the openness, responsiveness, adaptability, inventiveness and intellectual restlessness, to say nothing of the optimism, that have characterized Bruner's work since its beginnings are peculiarly well-suited. His outlook and his example seem likely to flourish, whoever it is who continues the narrative, and whatever it is that it turns out to say.

Notes

The bulk of this essay originally appeared, in a somewhat different form, in *The New York Review of Books*, 10 April 1997, pp. 22–4.

1 Two such works are Cole (1996) and Shore (1996). Cole, a developmental psychologist moving towards social anthropology, traces the history of cross-cultural research in psychology, in which he has himself played a major role, and develops a conceptual framework for the integration of anthropological and psychological enquiry based on 'the romantic science' ('the dream of a novelist and a scientist combined') of the Russian psychologists Alexander Luria, Alexei Leontiev and Lev Vygotsky. Shore, a social anthropologist moving towards cognitive psychology, reviews some classical ethnographic studies, including his own on Samoa, as well as various contemporary cultural forms – baseball, interior decorating, air travel – in an effort to relate what he calls 'personal' (that is, 'cognitive') and 'conventional' (that is, 'cultural') mental models to one another and thus transcend the long and unfortunate separation of anthropology and psychology.

Both these books bite off a good deal more than they can chew and do not come together very well; but they offer valuable accounts of the present state of play. For other such summary works, equally useful for getting a hands-on sense of the field and its prospects, see Shweder (1991), Stigler, Shweder and Herdt (1990), and Shweder and Levine (1984).

2 For a constitutive, as opposed to an add-on, view of the role of culture in human evolution, see Geertz, 1973: chs 2 and 3.

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2

BRUNER ON LANGUAGE ACQUISITION

Michael Tomasello

> Like a deck of cards … You don't want a card because you want the card, but because in a perfectly arbitrary system of rules and values and in a special combination of which you already hold a part the card has meaning. But suppose you aren't sitting in a game. Then, even if you know the rules, a card doesn't mean a thing. They all look alike.
>
> Robert Penn Warren, *All the King's Men*

By his own account, Jerome Bruner did not begin an intensive study of language and language acquisition until he arrived at Oxford University in 1972 (Bruner, 1983a, 1983b). In the two decades prior to his well-known voyage across the Atlantic, Bruner concerned himself primarily with processes of perception and cognition (e.g., Bruner, Goodnow and Austin, 1956; Bruner, Greenfield and Olver, 1966), while also maintaining an active interest in education, culture and human ontogeny (e.g., Bruner, 1965, 1966). But in those early years of the cognitive revolution he viewed language only as a window on cognition – perhaps as a tool of cognition – not as an interesting cognitive and cultural phenomenon in its own right.

Bruner's studies of language acquisition during his decade at Oxford were truly ground breaking. They opened up for developmental psychologists an entirely new dimension in the study of language acquisition: the pragmatics of linguistic communication between children and adults. In addition, pragmatics raised the question of how children understand the minds of their communicative partners and the cultural contexts within which communication takes place, which in turn paved the way for studies of children's theories of mind and the role of culture in shaping them. Bruner's investigations in recent years have gone beyond the microcosm where infant meets culture to the consideration of culture writ large in such things as narratives and cultural institutions. Together, these micro- and macro-level studies have helped to shape – indeed to define – the emerging discipline of cultural psychology.

In this essay I attempt to explicate Bruner's approach to the process of language acquisition in early ontogeny. I focus mainly on his work on infants' early communication and language, carried out between 1972 and 1983. I first describe his approach to word learning, which spawned much subsequent research on pragmatics, joint attention and early language. I then turn to his view of grammar, which is much less well known and which, in my opinion, requires some modification if it is to achieve its aim. I conclude with a few words about Bruner's more recent investigations into narrative and culture and their significance for cultural psychology.

The nature and uses of immaturity

In 1972, Bruner published a remarkable paper entitled 'The nature and uses of immaturity'. The major topic of this wide-ranging paper was human ontogeny in evolutionary perspective, focusing on the question of how the human species could get away with having its young so vulnerable and so helpless for so long a period in ontogeny. Bruner's answer was that a longer period of immaturity creates more competencies based on learning, and that means more competencies that can be used flexibly and intentionally. In the case of human beings, much of this learning is social or cultural in nature, and so many of the resulting competencies benefit from the prior learning of conspecifics:

> The nature and uses of immaturity are themselves subject to evolution, and their variations are subject to natural selection, much as any morphological or behavioural variant would be. One of the major speculations about primate evolution is that it is based on the progressive selection of a distinctive pattern of immaturity. It is this pattern of progressive selection that has made possible the more flexible adaptation of our species.... Because our ultimate concern is with human adaptation, our first concern must be the most distinctive feature of that adaptation ... 'culture using' ... [providing] amplifiers and transformers for [human beings'] sense organs, muscles, and reckoning powers, as well as banks for [their] memory. (Bruner, 1972: 687)

Much of Bruner's paper was concerned to review observations of the cognition and social behaviour of nonhuman primates, observations that were then emerging from the field and the laboratory. He discerned that as one moves from monkeys to apes to human beings one sees more flexible interactions with both the physical and social environments – a 'loosening of the primate bond', as he put it. Monkeys seem to live in more tightly structured social groups, infused with issues of dominance, and to behave in a stereotyped fashion. Apes and humans, in contrast, live in much more loosely arranged social groups and seem freer to use their cognitive resources more creatively. This is evidenced by their greater tendencies towards combinatorial play, their use of tools to explore and transform the physical environment, and the emergence of social reciprocity, communicative symbols, and observational teaching and learning, all of which regulate their social interactions and learning experiences in flexible and cognitively powerful ways. All these tendencies are especially prominent in human beings, leading to the form of social organization known as culture.

Near the end of the paper Bruner tackles language specifically in a section entitled 'Using symbolic means: Language'. This brief discussion is important because it introduces the two central and complementary topics that dominate his later work on language acquisition: first, how children are able to learn the linguistic conventions of their culture; and, second, the role of language and other cultural conventions in introducing children to particular ways of thinking, acting and interacting.

With regard to the first topic, Bruner introduces, albeit sketchily, two key notions that underlie all of his subsequent work on this question. First, he suggests the communicative function of language 'in all probability … determines many of its design features' (1972: 699). Language evolved for, and is learned in the context of, communication for purposes of coordinated action – responding to the 'need for help' in negotiating the social-technical way of life of the species (de Laguna, 1927). Second, Bruner argues that 'the initial use of language is probably in support of and closely linked to action' (Bruner, 1972: 700). That is, the structure of all languages revolves around syntagmatic relations such as agent, object, location, attribution and so forth – basic categories that, according to Piaget (1952) and others, also structure young children's nonlinguistic cognition and action in the world. Combining these two tenets, we arrive at the following position. Children learn to communicate linguistically in the context of coordinated activities with mature language users, and their talk is structured by their nonlinguistic cognition of actions, objects and properties.

Bruner then turns abruptly to the second topic, the influence of language on developing children. He writes:

> [But] with further growth, the major trend is a steadfast march *away* from the use of language as an adjunct of action.… [Language] frees the attention of the user from his immediate surroundings, directing attention to what is being said rather than to what is being done or seen. In the process, language becomes a powerful instrument in selectively directing attention to features of the environment represented by it … and giving shape to a belief system.… Increasingly, then, language in its decontextualized form becomes among human beings the medium for passing on knowledge. (1972: 700–2)

Once children have reached a certain level of skill with the language, and with other symbolic artefacts of their culture, in concrete action-based situations, they are in a position to be influenced by the more complex, abstract and culturally specific values, attitudes and beliefs embodied in those artefacts. Although Bruner does not mention narrative specifically in this essay, he later addresses the same theme under the rubric of 'the narrative construction of reality'.

Bruner's research on language acquisition after the publication of this paper falls neatly into two chronological periods corresponding to the topics we have identified. First, during his decade in Oxford he studied how children acquire their native languages. Since his return to the

United States in the early 1980s, he has considered more broadly the linguistic and narrative construction of reality and other processes by which immature human beings become fully functioning members of their cultures. I deal here at length with the first topic; I will touch briefly on the second at the end of the chapter.

Child's talk: learning to use language

Bruner's research at Oxford concerned how children acquire their very earliest means of communication, both nonlinguistic and linguistic. The catalyst that took him beyond his views of 1972, as he explicitly acknowledges (Bruner, 1983a), was his introduction to Speech Act Theory. The originator of the theory, J.L. Austin, was an Oxford professor until his death in 1960. Austin left an active legacy embodied, for example, in the work of John Searle and Paul Grice, and his ideas influenced many Oxford philosophers, including Peter Strawson, Anthony Kenny and Rom Harré, all interested in different ways in the study of language and mind. The insight for Bruner, found nowhere in his earlier writings, is that linguistic communication does not just serve to coordinate action among persons, but is itself a form of social action. Speech Act Theory provided typologies of the social acts that language can be used to perform, such as indicating, requesting, promising, asking for information, threatening and persuading.

At this time, of course, British analytic philosophy was still grappling with the profound but cryptic writings of Ludwig Wittgenstein (1953) on the relation of language to understanding, practice and social life. Of particular interest to many psychologists was the notion of a 'language game', which Wittgenstein explicitly illustrated with examples from language acquisition. The basic point was that the symbols of language take their communicative significance from the social practices in which they are embedded. This is clear, for example, with a word like 'trump' as it is used prototypically in the game of bridge; it only has meaning in the context of this game in which other concepts and terms are known as well, for example, 'trick', 'suit', 'bid' and so forth. Wittgenstein's deeper point was that, in some sense, *all* language works this way. It is just that our forms of life (analogous to the game of bridge) are so taken for granted by mature human beings that they are invisible.

Further inspired by the preliminary work of Joanna Ryan (1974) on speech acts in early language acquisition, Bruner set out to observe prelinguistic and just-linguistic children. He wanted to look at language as social action as it was manifest in the language games played by mothers and infants in middle-class British culture. His initial attempts, influenced by his background as an experimental psychologist, occurred in what he describes as a very cold and artificial laboratory situation. However, following the lead of his ethologist friend and colleague, Niko Tinbergen, he soon began to study children in their natural ecological setting: their homes.

Perhaps the best representative of this research is a study by Ratner and Bruner (1978). The problem they addressed was Wittgensteinian: how can a child learn a word when no procedures, ostensive or otherwise, can unambiguously illustrate its reference? Their answer was also Wittgensteinian: the child acquires the conventional use of a word by learning to participate in a form of life she understands first nonlinguistically, so that the mother's language is grounded in shared experiences the social significance of which the child already appreciates.

The evidence for this claim came from case studies of two children learning to play one or another form of a hiding–finding game. In one, Jonathan learned to play a game with his mother involving a clown on a stick that could be withdrawn inside a cloth cone and then made to reappear. Jonathan was observed every three weeks from 5 to 14 months of age. During each session he and his mother engaged in numerous rounds of the game, each of which consisted, prototypically, of (1) Preparation ('Jonathan, look what I've got here!'); (2) Disappearance ('Gone! He's all gone!'); (3) Reappearance ('Peek-a-boo! Hello, Jonathan!'); and (4) Subsequence (e.g., using the clown to tickle Jonathan). Across the 74 rounds observed over this nine-month period, the game was predictable and routinized both in its physical structure and in how the mother used language, with the variations consisting of a relatively small set occurring at several predictable junctures. Jonathan's participation in the game during these months became more active, so that by the end he took over the mother's role of operating the toy on many rounds. With regard to Jonathan's language, it was found that he picked up a number of his mother's locutions in the context of this game, most notably at the disappearance phase 'All gone!' and at the reappearance phase 'Boo!'

In a number of publications Bruner reflected on the process of language acquisition illustrated by this and similar studies (e.g., Bruner, 1975, 1981, 1983a). He called forms of life such as the clown game 'formats' for language learning, and claimed that young children acquire almost all of their earliest language in the context of formats. On this view, a social interaction between adult and child is a format for language learning if it has: (1) a delimited number of significant elements (objects and actions); (2) a clearly repetitive structure allowing for the anticipation of elements, but with some possibilities for substitution of elements across rounds; (3) salient temporal positions for appropriate vocalizations; and (4) reversible role relationships between adult and child. In essence, the claim is that social interactions of this type are the forms of culture – among all the other forms of culture the child may experience – in which the child's cognitive and social cognitive skills can make enough sense of things to acquire a linguistic convention.

Making sense of things in a social interaction of this type depends both on children's ability to understand the game and on their ability to understand the adult's communicative intentions within it. Children express their understanding of the game by various signs of anticipation, and even active intervention, as a particular round unfolds. They express their understanding of what the adult is trying to do most clearly when they take on the adult's role, for example, when Jonathan begins to hide the clown from his mother as she had hidden it from him on previous occasions. And indeed Jonathan's use of the words 'All gone!', at precisely the juncture in the game that his mother had used it, is another form of this role-taking ability since he speaks to her as she has previously spoken to him – what other researchers have dubbed 'role reversal imitation' (to distinguish it from straightforward imitation in which the child duplicates the adult's behaviour with no role reversal, e.g., they both kick the same ball) (Tomasello, 1995a, in press). Realizing that children's ability to reverse roles in this way was inconsistent with Piaget's (1954) picture of the infant as radically egocentric – unable to take the perspective of others – Scaife and Bruner (1975) investigated the ability of young infants to enter into joint visual attention with adults by following their line of regard. The emergence of joint attention skills in the months prior to the onset of language demonstrated that 1-year-old infants have all of the social cognitive skills they need to discern adult communicative intentions in the context of language-learning formats.

The upshot of all this was a theory of language acquisition in explicit opposition to Noam Chomsky's nativism (e.g., 1968). Chomsky proposed that human beings are innately endowed with a universal grammar and a Language Acquisition Device, or LAD. In opposition, Bruner posited that human beings come into a world that is already structured culturally and linguistically, and their long period of immaturity is designed precisely for them to acquire the particular cultural and linguistic conventions into which they are born. Thus, in all cultures, adults and children engage in routine interactions involving nursing and eating, bathing and sleeping, dressing and undressing, and other activities, in which adults address them with at least some language. This may be called the Language Acquisition Support System, or LASS. Human children are not innately equipped with a universal grammar applicable to all of the languages of the world equally (see Tomasello, 1995b). They are adapted to enter into joint attentional interactions with adults and to understand adult intentions and attention, and eventually to adopt adult roles in these interactions, including their use of particular linguistic conventions.

Subsequent research on word learning

Bruner's influence on the study of infants' early social interaction and language acquisition is undisputed. Trevarthen's (1979) work on primary intersubjectivity (infant in face-to-face interaction with adult) and secondary intersubjectivity (infant in triadic interaction with adult and object) were clearly inspired by Bruner's analyses, as was the work of Bakeman and Adamson on the early development of joint attention in infants' interactions with different kinds of social partners (Bakeman and

Adamson, 1984; Adamson and Bakeman, 1985). Butterworth's research on pointing (summarized in 1991) was also inspired by Bruner, as was the work of Corkum and Moore (1995) on infant gaze following.

Perhaps of most direct relevance for the study of language acquisition is the research my colleagues and I have conducted over the last decade on the relation between joint attention and early word learning. First, Tomasello and Todd (1983) followed six infants longitudinally from 12 to 18 months of age. At monthly intervals we videotaped the infants' natural interactions with their mothers and also obtained estimates of their vocabulary size (based on maternal diaries). Consistent with Bruner's hypotheses, we found a strong correlation between the amount of time an infant–mother pair spent in joint attention in the taped interactions and the size of that infant's vocabulary at 18 months, especially with regard to object labels (since these represent the objects of joint attention). Of special importance were those joint attentional episodes in which the infant and mother both made active contributions to the initiation and maintenance of the triadic interaction. Tomasello and Farrar (1986) replicated this result with a larger sample of children, and provided both observational and experimental evidence that the way mothers used language in joint attentional episodes was related to children's vocabularies; that is, mothers who used language that followed into their child's already established focus of attention ('That's a nice ball'), rather than trying to direct it anew, had children with larger subsequent vocabularies. Tomasello, Mannle and Kruger (1986) provided further confirmation for these results in a sample of twins, who engaged in joint attention with adults much less than singletons (due to the extra demands on adults in situations with two infants) and whose language development was slow off the mark as a result (see Tomasello, 1988, 1992a, for reviews).

This research basically provided support for one component of Bruner's theory: the important role of joint attentional formats and adults' use of language in attentionally sensitive ways in children's early language development. But Bruner also emphasized that infants must have certain cognitive skills to enter into joint attentional interactions with adults and to learn their language. Crucially, they must be able to understand adult communicative intentions. Recent research has confirmed this proposal, and has shown that as the second year of life progresses infants rapidly become skilled at determining adult communicative intentions in all kinds of novel social situations that bear little resemblance to the highly structured and repetitive formats of mother–infant interaction that scaffolded their very earliest productive language. In other words, infants' skills at establishing joint attention with adults gradually become much more flexible and general.

First, Baldwin (1991, 1993) showed that 19-month-old infants – while they are assisted in their word learning by adults following on to their attention – are capable of using the adult gaze direction as a cue to determine the adult's intended referent even when this differs from their own current focus of attention. Gaze direction, as first studied by Scaife and Bruner (1975), is of course a cue that can be used across a number of different types of language-learning formats and social interactions. Second, my colleagues and I found further support for infants' rapidly growing social cognitive skills in the context of word learning. We exposed children from 18 to 24 months of age to novel words in a variety of types of social interactions where the children had to do significant cognitive work to determine adult communicative intentions – and without the aid of adult gaze cues. In all cases the majority of children learned the novel words in either comprehension or production. For example:

- In the context of a finding game, an adult announced her intentions to 'find the toma' and then searched in a row of buckets all containing novel objects (rejecting some by scowling and replacing them) until she found the one she wanted (indicated by a smile and the termination of search). Children learned the new word for the object that the adult's smile indicated was the one intended no matter how many rejected objects intervened in the search process (Tomasello and Barton, 1994).
- An adult announced her intention to 'dax Mickey Mouse' and then proceeded to perform one action accidentally and another intentionally (sometimes reversing the order). Children always learned the word for the intentional, not the accidental action irrespective of whether it came first or second in the sequence (Tomasello and Barton, 1994).
- An adult set up a script with the child in which a novel action was performed always and only with a particular toy character (e.g., Big Bird on a merry-go-round, with other character–action pairings demonstrated as well). She then picked up Big Bird and announced 'Let's meek Big Bird', but the merry-go-round was nowhere to be found – so the action was not performed. Later, using a different character, children demonstrated their understanding of the new verb even though they had never seen the referent action performed after the novel verb was introduced (Akhtar and Tomasello, 1996).
- A child, her mother and an experimenter played together with three novel objects. The mother then left the room. A fourth object was brought out and the child and experimenter played with it, noting the mother's absence. When the mother returned to the room, she looked at the four objects together and exclaimed 'Oh look! A modi! A modi!' Understanding that the mother would not be excited about the objects she had already played with previously, but that she very well might be excited about the object she was seeing for the first time, children learned the new word for the object the mother had not seen previously (Akhtar, Carpenter and Tomasello, 1996).

Together, these experimental studies of word learning demonstrate dramatically the scaffolding process as Bruner envisioned it. Initially, at one year of age, children require highly repetitive and predictable formats for language acquisition in which the adult is sensitive to the child's attentional focus. But as children become more skilful at determining adult communicative intentions in a wider variety of interactive situations, highly structured formats with very sensitive adults become less crucial to the process and may be discarded, just as real scaffolding is discarded once the building is built. Joint attention is essential throughout the process of language acquisition, but it manifests itself in different ways at different developmental periods.

The acquisition of grammatical competence

Word learning was not and is not the main battleground for nativist and more culturally based theories of language acquisition. The principal conflict between Chomsky's LAD and Bruner's LASS, for example, concerns the acquisition of grammatical competence. Chomsky has never considered the words of a language, or any other aspects of semantics or pragmatics, as a part of the innate linguistic endowment. What is innate is the computational structure of language, its syntax (e.g., Chomsky, 1986). Bruner, on the other hand, would like to believe that the syntactic conventions of a language are learned in ways similar to the learning of lexical conventions. Over the years, however, Bruner has changed his mind on how this might work – and indeed whether it is a viable approach at all.

In his earlier writings Bruner clearly throws down the gauntlet:

> What may be innate about language acquisition is not *linguistic* innateness, but some special features of human action and human attention that permit language to be decoded by the uses to which it is put.... Our argument relates to the grammatical level more generally, particularly to a 'natural' semantic or pragmatic base for initial grammatical rules. The argument has been that the structures of action and attention provide bench-marks for interpreting the order-rules in initial grammar: that a concept of agent-action-object-recipient at the prelinguistic level aids the child in grasping the linguistic meaning of appropriately ordered utterances involving such case categories as agentive, action, object, indirect object, and so forth. And by the same token, a grasp of the topic-feature structure of shared experience aids the child in grasping the linguistic relation inherent in topic-comment and subject-object. (1975: 2, 17)

There could scarcely be a clearer statement of the position that the structure of language comes directly from the structure of phylogenetically and ontogenetically prior psychological processes involving action, social interaction and shared attention.

In his later reflections, however, Bruner is not so sure. At some point he recognized that his 1975 account was simplistic, but he was not certain what should replace it. In 1983, Bruner traced the history of his thinking in this way:

> Grammar is what it is, I argued, because it 'emerges' from a prior appreciation of the structures or 'arguments' of action: agent, action, object, instrument, location,

> etc. As one *acts*, one picks up 'protolinguistic' knowledge about these arguments. In time, this knowledge is abstracted and converted into a 'case grammar' that reflects the very same arguments. I even urged that the easy acquisition of Subject-Verb-Object order in sentences must be an outgrowth of the child's natural perception of the order of action in life.... The truth of the matter is of course, that grammars are extraordinarily arbitrary or 'artificial'.... Cause and effect may be a natural way of interpreting events in the world, but some languages will note this natural pattern 'ergatively' by marking the subject of the sentence as a 'causer', some will add something to the verb to indicate its 'causativeness', some will mark the *effect* of the cause by making the object of the sentence accusative.... Grammar, in short, constitutes its own problem space. Knowing about causation in the real world gives no clue about how it is represented in the grammar of a particular language. (1983b: 169)

In the midst of his uncertainty about how to deal with this new insight, and in a book published in the very same year (Bruner, 1983a), Bruner was downright conciliatory towards Chomsky and the idea of innate predispositions that are specifically linguistic. In two different places, one near the beginning and one near the end of this book, he outlines some of the prelinguistic skills that children must have to learn to use language involving action, social interaction, joint attention, the ability to abstract and so forth. But in both places he suggests that this may not be enough:

> But [the child] could not achieve the prodigies of language acquisition without, at the same time, possessing a unique and predisposing set of language learning capacities – something akin to what Chomsky has called a Language Acquisition Device, LAD.... In a word, it is the interaction between LAD and LASS that makes it possible for the infant to enter the linguistic community. (Bruner, 1983a: 18–19)

> No doubt the aspirant speaker of a language requires far more mental machinery than this at the outset to 'get into' the formal, abstract rules that govern his local language.... It may include innate knowledge of a universal grammar, as Chomsky suggested, or it may be in the form of initial sensitivities to distinctions in both language and the real world. (1983a: 119)

Although Bruner does not say specifically what caused the turnaround in his thinking, the late 1970s and early 1980s was a time when many new discoveries were made about languages differing in structure from English in fundamental ways, for example, the ergative languages to which Bruner alludes in the discussion of the arbitrariness of syntax quoted above (1983b: 169). What these discoveries meant was that no simple formula will take us from action to grammar. Indeed, there are even a small minority of languages where direct objects come consistently before subjects in utterances (Givón, 1995), which would seem to be temporally 'backward' with respect to the natural order of action in experience. The discovery that there is great diversity and arbitrariness in the grammars of the world, combined with Bruner's primary desire to establish pragmatics as an important topic in its own right, led him to leave the question of grammar open, so that he could focus on the dimensions of language that were unarguably pragmatic.

Bruner came to at least a partial resolution to the problem of grammar in the context of his later work on narrative. Here he proposes an analogy that shifts the emphasis away from the grammatical structure of language per se to the communicative motivation for grammatically structured language:

> Phonemes are mastered not for themselves but because they constitute the building blocks of the language's lexemes: they are mastered in the process of mastering lexical elements. I should like to make the comparable argument that grammatical forms and distinctions are not mastered either for their own sake or merely in the interest of 'more efficient communication'. Sentences as grammatical entities, while the fetish of formal grammarians, are not the 'natural' units of communication. The natural forms are *discourse units* that fulfill either a 'pragmatic' or a 'methetic' discourse function.... [O]ne of the most ubiquitous and powerful discourse forms in human communication is *narrative*. (Bruner, 1990: 76–7)

Despite the fact that particular syntactic forms are only arbitrarily related to their communicative functions, it is still the case that discourse/communicative functions drive the process of grammatical development.

In support of this view Bruner points out that the content of children's early utterances reflects a deep concern with narrative: their 'principal linguistic interest centres on *human action and its outcomes*, particularly *human interaction*' (1990: 78). Consequently, it is events concerning human action and interaction whose linguistic formulation children first strive to master. These are events that contain certain kinds of roles concerning agents, instruments, recipients and the like. What is new in this account is that the *structure* of nonlinguistic experience is no longer seen as determining the structure of children's grammatical competence; rather, the *content* of nonlinguistic experience, especially the narrative dimensions of experience, is taken to contain the experiential elements that must be encoded by any grammatical system – since this is what children wish to talk about. This newer claim is in many ways a weaker one, for it proffers no explanation of why the syntactic conventions of a language are as they are.

Thus, over time, Bruner went from positing a fairly direct grounding of syntax in human action to recognizing the arbitrariness of syntactic form. In this latter view, pragmatics – in the form of a concern with human intentional action and narrative – mainly serves to motivate syntax in that it determines many of the experiential elements that syntax serves to structure.

New views of grammar and its acquisition

Bruner's ideas about the acquisition of grammar have not played as important a role in subsequent research and theorizing as have his ideas on joint attention and word learning. But there are intriguing insights here that deserve further scrutiny. Indeed, I believe there is considerable merit to Bruner's original idea that the structure of the language that the child is acquiring is a reflection of: (1) the structure of action in the guise of the participant roles of agent, recipient, patient, instrument and so on; and

(2) the structure of attention in the guise of topic-focus structure. The mistake was to look for the structuring role of these cognitive processes in language acquisition. The structuring of language takes place not during acquisition, but between mature language users during human history. And the structure of action and attention determine powerful linguistic universals in the way human beings communicate with one another. But a variety of other factors conspire to make for relatively rapid historical changes in particular languages – most especially information processing factors (e.g., erosion of phonological content at the ends of words, making less salient such things as inflectional endings) and cultural choices about how to highlight or background certain kinds of information for interlocutors (e.g., ergative versus accusative syntax as a reflection of the perspective from which an event is viewed).

To explicate this view, we need first to reconsider the nature of grammar. Of particular importance are recent approaches to language structure called either Cognitive or Functional Linguistics (e.g., Langacker, 1987, 1991; Talmy, 1988; Givón, 1995; Goldberg, 1995). These approaches differ from Chomskian Generative Grammar (which Bruner accepted too readily) in their basic assumptions about the nature of language. Generative Grammar takes as its model of natural language formal languages such as mathematics and propositional logic, in which the distinction between syntax and semantics is absolute and rigorously maintained. In Cognitive and Functional Linguistics, on the other hand, natural languages, like biological organisms, are composed most fundamentally of structures with functions (symbol and meaning, signifier and signified). Linguistic structures vary from relatively simple entities such as words and grammatical morphemes to more complex entities such as phrases and whole linguistic constructions. *All of these have communicative functions*. There is no such thing as syntactic structure devoid of meaning.

The grammar of a language is nothing more or less than the inventory of its morphemes, words, phrases and constructions, along with their functions and categorical generalizations of these. These constructions vary independently in both their complexity and their abstractness. Thus, the utterance 'Fore!' in the game of golf is both simple and concrete; it is one word, with a particular intonation contour, that is used in one particular communicative circumstance. Other constructions are more complex because they are designed to indicate whole scenes of experience with multiple participants related to one another in complex ways. Some of these complex constructions are concrete in that they are based on particular words, such as many idioms like 'Nothing ventured, nothing gained', but some are abstract and categorical. For example, the passive construction in English does not concern any particular words but has the abstract form X + be + Verb-en (+ by + Y) and the function to report a transitive event from the perspective of the patient of the action. It is this schematization of grammatical patterns, into which novel linguistic items and constructions can be fitted, that gives language its creative power.

The constructions of a language arise historically through processes of grammaticization that take place in various forms of discourse among mature language speakers (Givón, 1979, 1995; Bybee, 1985). They emerge from communicative interactions in which the speaker is concerned with such things as economy of effort and the listener is concerned with such things as unambiguousness of expression (Slobin, 1997). The world the speaker and listener share is composed most importantly of events and states of affairs that are worthy of talk, and these contain the kind of event-participant structure (agents, instruments, recipients, etc.) that Bruner highlighted – what might be called the semantics of the construction.

The pragmatics of the construction has two aspects, one concerning the speaker's communicative intentions and the other concerning the speaker's adaptations to the listener's perspective. First, the speaker has a communicative goal in the sense that she is trying to manipulate or influence the listener's attention to something in the world. This prompts the need for ways to indicate requests, questions, comments and so forth. But second, the speaker must always take account of the listener's knowledge and expectations, so that the talk about the event is structured differently in different communicative circumstances. This is the topic-focus structure that Bruner highlighted. And while there are many variations to the pragmatic structuring of utterances in different languages, there are also universals that depend on human attentional processes (e.g., new information that needs to be highlighted is never inserted with low volume and stress into the middle of utterances).

To illustrate the semantics and pragmatics of constructions, let us examine a single event involving Fred, a window, a rock, and breaking. In the English language we may say such things as:

Fred broke the window with a rock.	Did Fred break the window?
The rock broke the window.	Did the rock break the window?
The window broke.	Did the window break?
The window was broken by Fred.	Break the window!
It was Fred that broke the window.	Was it Fred that broke the window?
It was the window that Fred broke.	Was it the window that Fred broke?
What happened was Fred broke the window.	

The semantics of these varied constructions all concern a single event. They all involve as pragmatics the combination of a speech act construction such as a question, an indicative, or an imperative (the speaker's communicative goal) and a perspectival construction such as a simple transitive, a simple intransitive, a passive and/or a cleft (adaptations for the listener's knowledge and expectations). These different constructions are used in different discourse circumstances, depending on what the interlocutor knows and expects. For example, if an interlocutor states 'Mary broke the window', the speaker might affirm that the window was indeed broken but at the same time highlight a disagreement over the person who did it by using a cleft construction: 'No, it was Fred that did it.' Or if an interlocutor asks 'What happened to the window?' the speaker will naturally want to make the shared information the topic of the reply, and the new information the focus, by using a passive construction: 'It got broken.'

Precisely how each of these constructions was grammaticized in the hundreds of years of the history of English (and before) is not known, but there are various theoretical accounts of how language becomes structured as adults communicate with one another, first, in a loosely pragmatic mode of discourse with much repetition and redundancy and little structure (as in current-day pidgins), and then over time in a more highly coded, tightly organized, less redundant, more automatized syntactic mode (Givón, 1979, 1995). In all cases, a particular sentence-level construction, such as a cleft or a passive, arises as a single semantic-pragmatic package for talking about a particular type of scene or event in a particular type of pragmatic-discourse context. As might be expected, semantic-pragmatic contexts that are both recurrent and general tend to give rise to the most abstract and general constructions (e.g., the situations of giving encoded by the ditransitive construction as in 'He gave/threw/sent her an X'). In all cases, the process of grammaticization is a complex mix of: (1) semantics, in terms of such things as number of participants (e.g., laughing only requires one participant whereas giving requires three); (2) pragmatics, in terms of speech act intention (e.g., question, request) and perspectival adjustment (e.g., cleft, passive); and (3) processing requirements involving the cognitive and attentional capacities and tendencies of speaker and listener in the process of communication.

Given these considerations, a Brunerian approach to children's acquisition of grammatical competence during ontogeny might go as follows. Languages are structured through various processes of grammaticization historically, based on the semantics of events, the pragmatics of communication, and various processing considerations. The resulting constructions do not reflect in any transparent way (either iconically or indexically) their communicative function. The child's task is simply to learn to use the constructions that speakers of her native language have so constructed. Although there are some iconic aspects to complex constructions, they are ultimately, like simpler linguistic forms such as morphemes and words, only arbitrarily connected to the scenes they depict. The child must therefore learn them just as she learns words: in a social situation in which she understands something of the speaker's communicative intentions in using the construction. Thus, the English child learns that word order most often signals who-did-what-to-whom in a particular way, whereas the Russian child learns that this function is signalled by small markers on the participants, by observing their use in meaningful communicative contexts.

Although the learning process is more cognitively complex – since learning constructions requires some mapping between multiple elements of experience and multiple elements of language – it is, in essence, just like word learning. The child must learn to read the adult's communicative intention connected with a linguistic structure, including the aspects of the referential event she wishes to indicate (semantics) as well as her speech act intentions and the perspectival adjustments she is making for the listener (pragmatics). One theory for English claims that this initially occurs on a very concrete level in which syntactic constructions are defined by specific verbs (e.g., kicker-kicks-kickee is one construction and kisser-kisses-kissee is another structurally unrelated construction), and only over time does the child come to abstract out a verb-general construction that can generate novel sentences with the same abstract structure (e.g., agent-action-patient or subject-verb-object) (Tomasello, 1992b; Tomasello and Brooks (1999)).

The essence of this analysis, then, is to redefine syntax in terms of linguistic constructions – of various levels of complexity and abstractness, but always with meaningful communicative functions – and then to apply Bruner's more general acquisition theory to syntax as well. The child is thus learning linguistic structures on several levels of complexity simultaneously (morphemes, words, phrases, constructions) all in basically the same way, and in some cases is discerning patterns that lead to the creation of abstract categories or schemas. The components of complex constructions can undergo elaboration independently as the child learns, for example, more elaborate ways to indicate objects for listeners through the use of such devices as articles and relative clauses (noun phrases), and more elaborate ways to indicate for listeners the time-sensitive dimensions of the utterance such as tense and aspect by, typically, markers close to the main predicate (Langacker, 1991). And of course children can also combine smaller constructions into larger constructions creatively, as when a prepositional phrase is added onto a transitive construction.

Notwithstanding the many details that need to be worked out in such an approach, the key point is this. If the syntax of language is seen not as disembodied and meaningless structure, but rather as a collection of meaningful and more or less generalized linguistic constructions, we can preserve many elements of Bruner's theory of the acquisition of grammatical competence. The key is to recognize that languages, like biological organisms, are structured over time through processes of organism–environment interaction. Many of the processes that Bruner posited as key for the child in learning grammar are indeed operative in structuring language, but only during the historical process. The child's learning of complex constructions is not reliably aided by such things as iconicity with the order of action and attention (as it is not in the acquisition of lexical items), but of course the talk is about action and its participants, and the managing of the attention of the other is in some sense the whole point of the use of language. So children must learn some way – whatever way their culture has created within the constraints provided by human-cognitive and social-cognitive abilities – to symbolize events, participants, communicative goals and discourse perspectives. In this view, human language is the way it is because adults create language structure, and children then re-create, relatively faithfully, what the adults have created. Language thus represents a prototypical case of the dialectic of adult cultural creation and child cultural learning that leads to cumulative cultural evolution in the form of artefacts with a 'history' (Tomasello, Kruger and Ratner, 1993).

Conclusion

Bruner's main concern since the mid-1980s has been narrative, that is, the canonical stories and myths, but also the reasons and excuses, that comprise a culture's way of symbolically representing reality, especially social reality. 'Narrative deals with the vicissitudes of human intentions', as Bruner puts it (1986: 16). For the most part narratives are made up of language, but at this level of analysis language is only material and thus not of primary interest in and of itself. Bruner's primary interest in narrative, as alluded to above, concerns the way in which coming to use language and other symbolic artefacts and institutions influences those who use them. Indeed, in some formulations, persons are actually constituted through their interactions with others within this cultural nexus. Of special importance in Bruner's most recent work are cultural artefacts at the most general level of organization, including everything from historical narratives to legal statutes to institutions of higher learning (Bruner, 1996).

But I would argue, and Bruner would likely agree, that all of these more complex and elaborated forms of culture derive ultimately from the human adaptation for a special form of social life (Tomasello, 1999). This form of life is made possible, as Bruner stressed over a quarter of a century ago, by the long period of immaturity during which children are given time to master the particular cultural practices and traditions of the particular persons around them. Among the most important of these cultural artefacts is language, and Bruner has contributed as much as anyone to our understanding of how it may be acquired in the context of social interactions with others. His ideas and empirical research in the areas of joint attention, word learning and narrative are all substantial and will continue to influence scientists investigating these phenomena for many years to come.

Bruner's ideas on the grammatical aspects of language and language acquisition should provide scientists with many interesting directions for future research as well. In this case, however, after some initial insights of great power and depth, he turned his attention to other matters and neglected to follow through and fully 'deconstruct' the grammatical aspects of language into their constituent psychological processes – including whole grammatical constructions. This radical move might have enabled him to recognize the structuring role of historical processes of grammaticization, as now described by a number of functional linguists, thus relieving young children of the burden of structuring language themselves. Children do not have to create language, only acquire it. In addition, as I hope I have demonstrated at least to some degree, this theoretical move also makes possible an approach to language acquisition in which the processes by which children acquire the lexical and syntactic conventions of their language are essentially identical.

In its grandest perspective, therefore, Jerome Bruner's legacy in the study of language acquisition is his attempt to identify and specify the ways in which the process of acquiring linguistic conventions is fundamentally similar to the process of acquiring cultural and communicative skills in general. This is consistent with his vision of a cultural psychology in which the less mechanical and more organic and humane aspects of human experience are highlighted, and in which human linguistic competence is accorded a key role as both a consequence of and a contributor to human cultural life.

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3

THE HOUSE THAT BRUNER BUILT

Stuart G. Shanker and Talbot J. Taylor

Removing the scaffolding

> La maison est une machine à habiter.
>
> Le Corbusier, *Vers une Architecture*

> No house should ever be *on* any hill or on anything. It should be *of* the hill, belonging to it, so hill and house could live together each the happier for the other.
>
> Frank Lloyd Wright, *An Autobiography*

Those of us, who, like Bruner, were in Oxford in the late 1970s, can understand why the scaffolding metaphor so appealed to him when he wrote *Child's Talk* (1983a). Thanks to the ravages of time, Oxford's 'dreaming spires' had become a nightmare of boards and trestles. Typical was Magdalen Tower, which seemed to be crumbling before one's eyes. Years of renovation went by with little discernible progress and anxiety mounted that it was too late to save the magnificent structure. It is difficult to convey the emotion the entire town felt when the scaffolding finally came down and Magdalen Tower emerged with its ancient glory restored. Certainly, that emotion was in marked contrast to the outrage expressed in Paris when the Pompidou Centre was completed. Parisians complained that their new monument to culture appeared to be layer upon layer of scaffolding with no building at its core. It is worth considering, however, whether it is the scaffolding of the Pompidou Centre, rather than that of Magdalen Tower, that is the more apt metaphor for the view of language development presented in *Child's Talk*.

Scaffolding theory holds that caregivers monitor and adjust the amount of support received by the child as she begins to master language. The scaffolding metaphor had an immediate impact on the study of language acquisition, and became one of the major ideas in psycholinguistics. Since the publication of *Child's Talk*, Bruner's somewhat sketchy picture of the 'behavioural formats' involved in scaffolding has been supplemented with detailed explanations of the socioaffective, communicative and neurobiological mechanisms of dyadic interaction.

Today the consensus among developmentalists who adopt a social interactionist perspective is that development involves an ongoing, complex interplay between biological and environmental factors, and hence it is difficult to draw hard-and-fast distinctions between social, emotional, cognitive, communicative and linguistic elements in development. Accordingly, any attempt to explain some aspect of a child's development must consider such diverse factors as:

1. the child's ability to regulate her states and activities, and to perceive and respond to the world (primarily a function of the child's responsiveness to stimuli and facility with bodily movement);
2. the biological constraints on dyadic interaction that result from secondary altriciality;[1]
3. the child's propensity to engage in relationships with others;
4. the importance of shared affect for the child's developing awareness of self and other;
5. the significance of shared and directed gaze for the child's socioaffective and communicative development;
6. the importance of the caregiver's behaviour (e.g., smiling, facial animation, body posture, gaze) during 'critical periods' of the child's brain growth for her cortico-cortical and neurohormonal development;
7. the stimulatory and communicative significance of gestures and declarative pointing;
8. the child's growing ability to signal her intentions and desires, to describe and express her ideas and feelings, and to engage in complex communicational acts with caregivers;
9. the facilitating role which Child Directed Speech (Motherese) plays in the child's acquisition of language, as the caregiver regulates her prosody according to the child's signals of (non)comprehension, and employs, for example, expansions, extensions, recasts, reflective questions, clarification questions and repetitions to sustain and enhance communication;
10. the significance of make-believe play for virtually all aspects of a child's development.

The idea that early infant–caregiver interactions can be described in dialogic terms pre-dated *Child's Talk* (see Trevarthen, 1979). But what made Bruner's position revolutionary was its emphasis on a Vygotskian view of language socialization. One of the book's central messages is that language and culture cannot be disentangled. Thus, in addition to the above themes, *Child's Talk* stresses:

11. the presence in primates of a 'drive' to conform with the norms that define their society;
12. the significance of rule-following in the child's socioaffective and communicative development;

13 the primacy of 'learning how to do things with words' (Bruner, 1983a: 7, 8, 46, 115).

Thus scaffolding theory integrates interactionist and cultural views of child development, presenting the child as *trying* to become a member of her linguistic community (see Shatz, 1994: 8, 9). Scaffolding theory therefore seemed to be a radical alternative to the generativist view of language acquisition as automatic, spontaneous and nonconscious. But although Bruner dismisses generativism as 'implausible' and 'miraculous' (1983a: 17, 34), he treated scaffolding merely as a precursor to language acquisition conceived as generativism recommends. Bruner simply supplemented the Language Acquisition Device (LAD) with a Language Acquisition Support System (LASS). As a result, scaffolding theory is commonly seen merely as a propaedeutic to language acquisition: a preliminary structure that enables language, like Magdalen Tower, to emerge fully formed in all its architectural splendour.

But what if we were to excise LAD entirely from the picture? Would the social interactionist explanation of the child's burgeoning linguistic skills collapse, or do the roots of language actually lie in such primal activities as sharing, requesting, imitating and playing? Do the 'universal stages' that have been documented in (normal) language acquisition (see Brown, 1973) compel us to assume that the 'abstract structure of language' must somehow be represented in the brain (see Pinker, 1994) or is an alternative picture possible, one which stresses the essentially cultural character of the child's learning 'how to do things with words'?

In our view, the rejection of LAD enables us to appreciate the real contribution that *Child's Talk* can make to our understanding of, not just linguistic development, but language per se. By formally distinguishing between competence and performance, the generativist proposes a neat division of labour between linguist and psychologist. But this should be resisted, for continued allegiance to LAD serves only to undermine social interactionism. In what follows, we do our best to reveal the potential of an interactionist approach liberated from the generativist orthodoxy.

Born to talk

> The baby has the all-important first task of learning the nonverbal basis of social interaction upon which language will later be built.
>
> Daniel Stern, *Diary of a Baby*

It is frequently claimed in psychological writings that the human infant is 'born social'. Often, no more is meant than the truism that infants depend on caregivers to survive and develop. If the claim is to be a substantive one, it must be shown that children are born with certain biological traits that dispose them, in appropriate contexts, to become social agents. Read in this way, the claim sets the daunting task of explaining how a child's senses, 'processing mechanisms', reflexes, and/or needs somehow dictate that she will become someone who, as Shatz puts it, 'understands and uses social means to interact with others in mutually comprehensible ways' (1994: 6).

The emergence of the 'ethological view' in psychology over the past generation has helped developmentalists address this issue by identifying innate 'social mechanisms' which human infants share with other primates (Bowlby, 1969).[2] Newborns are perceptually attuned to the human face, voice, odour, touch, taste and movement (with marked preference shown in each case to the primary caregiver). In addition, infants are predisposed to engage in behaviours, such as crying, smiling, gazing, cooing and imitation, which evoke caregiver responses (Messer, 1994). Likewise, caregivers exhibit behaviours which reveal that they are themselves preadapted to nurture and protect their infants. For example, mothers can hear their infants crying in the noisiest of environments, can reliably distinguish their own infant's cry and smell. And caregivers have an extraordinary ability to fine-tune their behaviours to help their infants master all kinds of social and problem-solving skills, including, of course, language (Gallaway and Richards, 1994).

The above social behaviours seem closely tied to the emergence of secondary altriciality in hominid evolution (King and Shanker, 1997). For, as Noble and Davidson put it, 'the conditions of increased altriciality of hominids led to increased occasions for joint attention with caregivers, and increased opportunities for observational learning' (1996: 200). Yet, as important as joint attention is in the emergence of language, secondary altriciality may have a still deeper impact on the infant's neurobiological development. For far from following a fixed maturational design, a child's cortical development is fundamentally bound up with the nature and quality of its interactions with primary caregivers.

One striking difference between *Homo sapiens* and nonhuman primates is that human beings have a significantly larger prefrontal cortex. And yet five-sixths of the development of the human prefrontal cortex occurs postnatally, before the child is two. Moreover, the infant's socioaffective environment has a crucial influence on its cortico-cortical and neurohormonal development. Processes responsible for postnatal brain growth are 'significantly influenced by the stimulation embedded in the infant's socioaffective transactions with the primary caregiver' (Schore, 1994: 13). It seems that early interactions with primary caregivers supply the higher-order regulatory controls that are as yet undeveloped in the child's prefrontal cortex. Mothers not only nurture and protect their infants in the first year of life; they act as something of an external central nervous system, significantly influencing the child's cortical development (Trevarthen, 1979).

The primary mechanism whereby this is accomplished is the affectively charged exchange of shared gaze (and/or touch). From virtually the first days after its birth, an infant and her caregiver are engaged in an 'interactive system of reciprocal stimulation' (Schore, 1994: 71). Caregivers of newborns pay far more attention to their infant's eyes than any other body part. Infants are attuned to focus on objects 20–25 cm away, which is the distance mothers tend to hold them both during breast-feeding, or when the child is held up '*en face*'. An infant's gaze can reliably evoke a mother's gaze, and, beginning around the age of 2 months, the infant starts to focus on eyes. The gleam in a mother's eyes – which may be literally a flash of light reflected off her fovea caused by excitatory activity in her limbic system – triggers pupil dilation in the infant (Schore, 1994: 72ff.).

Significantly, an infant smiles more when the mother's pupils are dilated, and vice versa. The mother's facial expression stimulates positive affect in the infant, which is communicated back to the mother via the infant's facial expression, so that both are in a symbiotic state of heightened arousal. In contrast, a non-affectively expressive maternal face, with no brightness in the eyes, triggers negative affect in the infant. Similarly, a non-responsive infant, or one who constantly averts her gaze, can produce profound negative affect in the mother. In other words, shared gaze (or touch[3]) triggers positive hedonic arousal in mother and infant, and the absence or disruption of such interaction can cause anxiety and depression in both (Cohn, Matias and Tronick, 1990; Greenspan, 1997).

Schore speaks of these gaze exchanges as inducing an 'affect-amplifying', 'symbiotic' state shared between mother and child. Here may lie one of the reasons why, as the child matures and makes its first movements away from its mother, it constantly monitors her expression for signs of safety or danger (Oatley and Jenkins, 1992). It was Bowlby who first explained how the mother's face, and the emotional responses it displays, provide the child with a secure base from which to launch explorative sorties into the world, but to which it may always return in the event of need or danger (Bowlby, 1988). But it may also be that, at the neurobiological level, the affectivity expressed in the mother's face serves to amplify the child's positive arousal and thereby provide the child with the necessary stimulation to motivate further exploration of its environment (Schore, 1994: 102).

The important point here for the child's socioaffective development is that the infant finds stimulation that excites it pleasurable and hence comes to seek it out. In some primitive sense, the child smiles in order to evoke the mother's smile. Conversely, the infant finds too much arousal unpleasant and will avert its gaze, whereupon the psychologically attuned mother responds by reducing the stimulation (Schore, 1994: 82ff.). Although one should not exaggerate the intentional nature of these early behaviours, it is certainly tempting to see them as forming the interactional template for the genuinely communicational behaviours that emerge between 5 and 9 months of age. There has been considerable debate over the past decade about whether young infants are active participants in shared gaze and vocalization exchanges or whether it is the caregiver who shapes the infant's behaviour (Schaffer, 1984). But if Schore is right, 'long before the infant either comprehends or speaks a single word, it possesses an extensive repertoire of signals to communicate its internal states' (Schore, 1994: 88).

In other words, the communication of affective states is *bi-directional* from a remarkably young age. This is why Schore, following Bateson (1975), refers to the early stages of dyadic interaction as 'conversation'. What Bateson had in mind was that exchanges between an infant and the caregiver serve to cement emotional ties between them (Bateson, 1975). Schore adds the idea that the members of a dyad are involved from the outset in shared gaze 'dialogues' which maximize the optimal levels of arousal for the infant and minimize the infant's negative affects.[4]

The metaphor of conversation crops up time and time again in interactionist writings, as does the idea of 'turn taking' (Trevarthen, 1993).[5] In this idealized format of alternating sequential roles, little overlap or conflict is envisaged between infant and caregiver communications. As Savage-Rumbaugh and her colleagues put it, both members of the dyad are involved in

> something like a delicate dance with many different scores, the selection of which is being constantly negotiated while the dance is in progress, rather than in advance. Experienced partners know what turns the dance may take, and, more important, they have developed subroutines for negotiating what to do when one or both partners falter in the routine. (Savage-Rumbaugh, Murphy, Sevcik, Brakke, Williams and Rumbaugh, 1993: 27)

The use of these metaphors reflects an intriguing attempt to trace the origins of language to the child's earliest social interactions and, moreover, to read the child's earliest interactional patterns forward into language; that is, to treat language as essentially interactive. Thus, social interactionism suggests a fascinating response to the nativist thesis that the human being is 'born to talk' (Hulit and Howard, 1997). In a sense, the baby is born 'talking', at least insofar as the 'visual dialog between the mother and child, the most intense form of interpersonal communication, acts as a crucible for the forging of preverbal affective ties' (Schore, 1994: 80). And, we might add, the affective nature of early social interaction acts in turn as a crucible for the forging of language skills.

Architectural discord

> The world is a quiet place for Piaget's growing child. He is virtually alone in it, a world of objects that he must array in space, time and causal relationships. He begins his journey egocentrically and must impose properties on the world that will eventually be shared with others. But others give him little help. The social reciprocity of infant and mother plays a very small role in Piaget's account of development. And language gives neither hints nor even a means of unravelling the puzzles of the world to which language applies. Piaget's

> child has one overwhelming problem: to bring the inner representations of mind into equilibrium with the structures of experience. Piaget's children are little intellectuals, detached from the hurly-burly of the human condition.
>
> Jerome Bruner, *In Search of Mind*

Since the appearance of *Child's Talk* we have acquired a much better understanding of the importance of social relations for a child's emotional development. Infants have intense emotional reactions to people, but only relatively mild emotional responses to objects. (Indeed, it is a reliable sign of a developmental disorder if a child responds with the same sort of intensity to objects as to people (Greenspan, 1997).) Dyadic interaction is essential for both cognitive and communicative development (Berk, 1994; Owens, 1996). And, of course, as far as language development is concerned, it is well known that if a child's only exposure to language is from television or radio, she will invariably grow up with a severe language deficit.

Generativists have sought to minimize the significance of this last point by arguing, first, that a child deprived of normal social interaction suffers such severe emotional and cognitive deficits that its language abilities will naturally be impaired; and second, that if a child is to acquire language, it must be exposed to a normal linguistic environment within some sort of 'critical period' (e.g., the first seven years of life) (Lenneberg, 1967; Curtis, 1977). But it has never been made entirely clear why the 'language faculty', which is supposedly isolated from cognitive and emotional factors in such cases as Williams syndrome (Pinker, 1994) or linguistic savants (Yamada, 1990; Smith and Tsimpli, 1995), is none the less so severely impaired by social deprivation. Moreover, recent research on second-language acquisition casts doubt on the 'critical period' hypothesis (Bialystok and Hakuta, 1994). And when one looks at the so-called 'anomalous' cases of high language proficiency/low IQ that have been highlighted in the generativist literature, one finds virtually no discussion of the various psychological reasons why savants may have overdeveloped skills in one particular domain (Howe, 1989); moreover, it transpires that the IQs of the subjects involved places them at a mental age of at least 5 years: that is, they are well beyond the point of normal language acquisition *vis-à-vis* IQ (Tomasello, 1995). But perhaps the most important point to make against generativism is this: it is not just that social interaction is a vital ingredient in a child's development; rather every aspect of that development fundamentally involves a process of socialization.

Take the emotions. Psychologists of emotion distinguish between basic (e.g., interest, enjoyment, surprise, anger, fear) and higher emotions (e.g., empathy, altruism, pride, compassion, love). The basic emotions are said to be innate because they have derived through evolutionary-biological processes and serve adaptive functions, they are universally accompanied by distinct facial expressions (which even blind infants demonstrate at birth), and they are associated with specific neural substrates (Izard, 1991).

The higher emotions – such as what in Spanish are called '*pundonor*' and '*gracia*' – are enculturated; that is, the child learns, not just how to behave, or what to feel, but further, that acting in this way in such-and-such circumstances counts as acting with honour or grace. But even the 'basic emotions' become socialized, for every culture insists that the child develop control over them and learns what its community regards as their proper expression (see Briggs, 1970, on the Inuit).

The same point applies to children's play-acting, their problem-solving and thinking (Vygotsky, 1962; Rogoff, 1990). Thus interactionists have concluded that 'the child should be seen as more of a socioaffective than a sensorimotor being' (Stechler and Carpenter, 1967, quoted in Schore, 1994: 71). That is, social interaction is not just essential for a child's emotional and cognitive development, for that development is essentially social. And the same is true of the child's linguistic development. Indeed, in many respects language constitutes not just the paradigm, but the primary vehicle for the child's socialization (Shatz, 1994).

Language socialization begins long before the child utters or even understands its first word. Over its first seven months of life (and possibly earlier; see Locke, 1993) the child becomes attuned to the characteristic speech sounds of its community. Recent research on monkeys (Kuhl, 1991), as well as Savage-Rumbaugh's work on bonobos (Savage-Rumbaugh, Shanker and Taylor, 1998), suggests that this phenomenon is common to all primate infants, and not just human infants. But categorical perception, as it is often called, only develops in social interaction. It does not occur if the subject is simply exposed to a mechanical language source.

Child Directed Speech (CDS) represents an even more important aspect of language socialization. One of the most striking discoveries about CDS is that mothers are most effective in facilitating their child's language development when they 'do not talk at children, but with them' (Snow, 1986: 80). Children acquire language more quickly when their caregivers engage with them in joint activities. This is as true for language-delayed children as it is for normal children; for the former improve markedly in their language skills if their caregivers switch from directive to interactive styles of communication (Snow, 1994). Indeed, between 20 per cent and 50 per cent of children diagnosed with Specific Language Impairment can recover fully, provided their therapy is interactive and not directive (Leonard, 1997).

As we saw, on the classical view of scaffolding theory, social interaction simply takes over the role that the generativist theory assigns to innate processing mechanisms. On this reading, if the child is not born with the 'heuristics' required to process the 'complex information' that is being 'accessed', then those 'constraints' must be supplied by the child's primary caregivers. Hence social interaction is seen as a support system – a set of socially imposed constraints and guidelines – which enables the child to acquire the cognitive or linguistic 'structures' an isolated organism could not acquire inductively (according to such arguments as 'the poverty of the stimulus').

Thus the original debate over CDS was conceived in terms of the processing role of social interaction. This was partly as a result of Gold's proof that since only finite-state languages are learnable from Text Presentation, for a computer program to 'learn' an open-ended language it must be presented with both positive and negative information (Gold, 1967). This way of viewing the issue, however, accepts *ab initio* the suitability of the computational metaphor for framing psychological questions about language acquisition. But the real moral of recognizing the essentially social character of a child's linguistic development is that it is simply inappropriate to compare a child learning how to interact with others linguistically to a device that mechanically processes information. It is not simply the computational metaphor which is to blame here, but the underlying epistemological picture which invites it (and other reductionist metaphors that mechanists have deployed over the past two centuries): the picture of an isolated mind confronted with an array of complex information on which it seeks to impose order (Shanker, 1998). It is precisely this picture which Bruner challenges when he emphasizes the 'social reciprocity of infant and mother' in virtually every aspect of a child's development (Bruner, 1983b: 138).

Thus there is far more to the interactionist story than the role of 'protoconversations' in regulating attention and sustaining positive hedonic states. For it is in the context of these affect-intensified interchanges that the child's first 'socializing' experiences occur: the very experiences that provide the necessary foundations for language acquisition. Starting around 11 months, the mother typically begins to break shared gaze and to display various negative facial expressions (e.g., conveying anger or disgust) in response to, and in order to alter, her child's behaviour. These sudden affective shifts, which the mother often makes unconsciously, have a startling effect: in an instant the child stops moving, her head hangs limply, her smile disappears, and she averts her eyes. Schore writes: 'The infant is thus propelled into an intensified low arousal state which he cannot yet autoregulate. Shame represents this rapid transition from a pre-existing high arousal positive hedonic state to a low arousal negative hedonic state' (1994: 203). This so-called 'shame' response, Schore argues, is 'the essential affect that mediates [the] socializing function' (1994: 200). The mother's 'frequent attempts to change the child's behaviour against his will and the child's attempts to have his way despite knowing what his parent wants' set the stage for 'a dramatic shift [in the parent's role] from primarily a caretaker to primarily a socialization agent' (Hoffman, 1975, quoted in Schore, 1994: 200). The child learns, through these episodes of 'dyadic dissonance', that he must control certain impulse behaviours which elicit the 'disgust face' from his caregiver. The most obvious example of this is toilet training, which introduces the child to the need for 'voluntary control over an involuntary process' (Schore, 1994: 228). Interestingly, this latter achievement, which plays such an important role in the socialization process, occurs at roughly the same time as the child's 'linguistic explosion'. However, the use of socialization techniques is hardly restricted to particular types of interactional events; they are part of the flow of daily interaction (Schaffer, 1984).

The generativist literature on language development places little emphasis on the occurrence and function of socialization in the child's acquisition of linguistic skills. This is hardly surprising as the generativist sees language acquisition in purely epistemological terms: that is, as a matter of the child (or rather, a particular module of the child's mind) working out the formal properties of a language system or 'grammar'. These formal properties are conceived as the facts of language, those which, with the necessary assistance from its innate knowledge of linguistic principles and parameters, the child must discover. In contrast, Bruner has always regarded language acquisition less as a matter of discovering pre-existent facts and more as a matter of the child's socialization into culture-specific forms of communicative behaviour (e.g., Bruner, 1975). This perspective comes through clearly in *Child's Talk*, with its emphasis on the role of behavioural routines, games and formats in language development. These are the nursery stages of the long process that is the child's enculturation into language.

Yet it is essential that linguistic enculturation should not be thought of simply in terms of the child's developing awareness of certain regular patterns of behaviour. It is true, as Bruner says, that there is 'a surprisingly high degree of order and "systematicity"' (1983a: 28) in the child's communicational environment and that this greatly facilitates her linguistic development. However, we must be wary of representing those routines and formats as 'scaffolding' for the epistemologically conceived task of mapping linguistic regularities and hypothesizing their underlying rules – that is, of mastering the facts of 'the linguistic code' (cf. Bruner, 1983a: 11). For a crucial conclusion of recent research is that the child does not simply notice or expect concomitant events in its interactions with its caregiver. Rather, the child learns how it and its co-interactants are supposed to behave. Language, as a form of social interaction, has a fundamentally normative character. The child's acquisition of formats and interactional routines is thus a matter of her gradual socialization into the normative techniques of cultural life. Thus, recent research within the social interactionist perspective leads us to see how the child's linguistic development is inseparable from her socioaffective development; and this realization provides the study of linguistic development with one of the means to liberate it from the epistemological model which underpins generativism, and, equally, the classical view of scaffolding theory which holds that 'it is the interaction between LAD and LASS that makes it possible for the infant to enter the linguistic community' (Bruner, 1983a: 19; cf. Savage-Rumbaugh, Shanker and Taylor, 1998). For as Bruner emphasized in *Child's Talk*, and even more explicitly in *Acts of Meaning* (1990), the child's socialization into language demands its transformation into a cultural agent.

Languacultural development

> To imagine a language means to imagine a form of life.
>
> Ludwig Wittgenstein, *Philosophical Investigations*

Child's Talk argues that to understand how a child acquires language we have to view language from the child's own perspective. This requires us to see the child not as a computing device, but as a human agent (Harris, 1996). Accordingly, the acquisition of language emerges, not as an epistemological problem the child's brain must solve (through innate knowledge or experiential learning), but as the gradual development of practical techniques whereby the child engages with her social environment.

The child initially learns that her interactional ends may be realized by means of her own behaviours and vocalizations: shifts of gaze, turns of the head, crying, pointing, facial expressions, etc. Gradually the child develops these proto-communicative behaviours into more and more 'adultlike' forms of interaction and, at the same time, more effective means of securing her ends. As *Child's Talk* illustrates, the child's mother typically demands increasingly sophisticated behaviour if those ends are to be realized. Thus the child's development of more sophisticated techniques emerges partly in response to the increasing demands of her environment, and partly as a result of her seemingly natural fascination with language itself (Karmiloff-Smith, 1992).

If, as Bruner argues, the child develops language as a means of 'doing things with words', then what are these 'things' that the child is learning to do? What are the young child's interactional intentions and goals? *Child's Talk* presents the child as learning to perform such classic speech acts as referring, requesting, ordering, commenting, telling stories and so on. Yet when the book raises the question of the origin of such speech acts, Bruner falls back on the assumption that they must be innate. Children apparently have a natural drive to refer to things, to request things, to tell stories and so on (see the discussion in Taylor, this volume).

Bruner is surely right to insist that the child acquires ways of performing particular kinds of communicational acts. However, it is crucial that communicational acts must not be treated as if they were separable – or as if they could be studied independently – from their conceptualization within a particular cultural form of life. The child's acquisition of particular speech acts is no less an integral part of her emerging competence in that form of life than is the acquisition of other culturally defined activities. Such acts and their cultural conceptualization are, to use Saussure's analogy, like two sides of the same sheet of paper: if you cut one, you inevitably cut the other. 'Referring to something', for example, cannot be something the child can do except as a feature of the child's reflexive integration into the forms of life of her cultural environment.

The following three related points clarify this claim and examine its implications. First, what the child acquires is not 'raw' behaviour, but cultural techniques. That is, she learns ways of behaving that count, within her environment, as the performance of particular culturally conceived acts. For instance, the child does not simply learn to produce certain vocal sounds or gestural patterns in the presence of particular objects: she learns how to do what we call 'talking about' objects. Similarly, she doesn't just learn to utter particular sounds when she desires some action from her mother; she learns how to 'ask for it', as 'asking for something' is conceived of in her cultural environment, her 'languaculture', as Michael Agar (1994) terms it. Producing certain sounds or gestures amounts to, for example, asking for something only as conceptualized within the reflexive practices of a particular languaculture. Analogously, moving two pieces of carved wood in a certain way across a checkerboard's two-dimensional surface is not 'castling' except as conceptualized within the game of chess.

What children acquiring, for example, English learn are not 'nameless' (i.e., unconceptualized) vocal and gestural patterns. They learn how to:

'say you're sorry'
'thank somebody'
'say what your name is' ('say what you are called')
'answer me'
'tell me what happened'
'tell the truth' (and how to 'lie')
'tell me where it is'
'say bye-bye'
'tease someone'
'say what you want'
'describe what it looks like'
'tell me what you're thinking'
'say where it hurts'
'ask what it means'
and so on …

Children brought up in other speech communities learn how to perform other, culturally conceived communicational acts: other things that may be done with words within their cultural forms of life. They learn, for example: how to 'se plaindre' (French), 'govorit' (Russian), 'aanstoken' (Dutch), 'tatoti' (Futunan), 'tohutohu' (Maori), 'amo' (Mangaian), 'isani' (Blackfoot), 'gwaadmawaad' (Ojibwa), how to 'pahsoy' (Yurok), and so on (Verschueren, 1989: 20–4).

The point is that language development is indeed, as Bruner says, a matter of learning 'how to do things with words'. However, what those 'things' consist of – and what behaviour counts as an instance of any one of them – are matters determined by the reflexive practices of the cultural environment in which the child is raised. Analogously, the child learning how to play chess is not learning, for example, how to move her hand to grasp and manoeuvre wooden shapes, she is learning how to do something that in a chess environment is called 'castling'.

Second, the child should not be conceived as merely learning how to produce the behaviour that in her cultural environment counts as performing certain speech acts. For an integral component of learning how to do things with words is learning what 'things' she will be taken to have 'done' when she utters those words, that is, what speech acts she will be taken to have performed.

For example, a child cannot truly be said to have learned to say what her name is if, when she says 'Charlotte', she does not know that what she is doing is 'saying what her name is'. Likewise, she cannot be said to have learned how to apologize if she does not yet know that saying 'I'm sorry' in the appropriate circumstances is (what we call) 'apologizing'. Imagine a little girl who utters the sounds [aim sari] ('I'm sorry') at apparently random points in the day, yet her behaviour indicates that she does not understand what it is to apologize. She does not act as one typically does before or after apologizing, she doesn't address her remarks to anyone in particular, she does not say 'I'm sorry' at the contextually appropriate moments (i.e., when she has something to apologize for). It is no more justified to say of her that she has learned to apologize than it is to say that a parrot which can squawk, 'A parrot's life is hell', has learned to complain about his lot in life.

There is, in other words, an essentially *reflexive* character to what a child acquires in acquiring language. Learning a culture's reflexive conceptualization of the acts one can perform with language is, we would like to say, part and parcel of learning to perform those speech acts. The child learning English learns, for instance, that saying particular words in particular sorts of circumstances is 'Saying what you want' and that saying other words in other sorts of circumstances is 'Saying what your name is'. Acquiring the English-speaking culture's reflexive conceptualization of these 'things you can do with words' is an ineliminable component of learning how to do those 'things'.

Third, learning, for example, how to apologize involves even more than learning when and how to say [aim sari] and that doing so in the right circumstances is (what we call) 'apologizing'. For it also includes learning, for instance, that merely saying [aim sari] is not enough to succeed in apologizing. If you have learned how to apologize, then you know that you have to address this vocalization not just to anybody but to the right person. And this means that you need to be able to determine who 'the right person' is. (What sense would it make to say that Charlotte had learned to apologize if she could never work out to whom her utterance of 'I'm sorry' should be addressed?) Saying sorry to the right person is not sufficient if you don't mean it. And this means that learning how to apologize involves learning what in our culture counts as 'meaning it'. Furthermore, you also have to learn that you can only apologize for certain things. You can't apologize for something for which you were not responsible. So learning how to apologize involves learning to determine what you can be held responsible for according to the norms of our languaculture.

Nor can you succeed in apologizing for something for which you are responsible but which is not perceived as 'bad', 'unfortunate', or otherwise inappropriate. So, if you are to learn to apologize, you have to learn what, within our languaculture, counts as 'bad' or 'unfortunate'. Finally, what *you* have to do to succeed in apologizing is only half the story. For it is equally important that you learn to tell when someone else has apologized. How could a child be accurately described as having learned to apologize if she never understood when someone else had apologized to her?

Let us return to the example of learning 'to say what your name is'. To do this, the child must learn more than that she should pronounce 'Charlotte' when asked 'What's your name?' For it makes little sense to say that Charlotte has learned

(1) to say what her name is

if she does not know that

(2) 'Charlotte' is her name

and, therefore, that when she says 'Charlotte' in reply to 'What's your name?', she is saying what her name is. However, this in turn entails that she must know what a name is. For how can she have learned that

(2) 'Charlotte' is her name

if she does not yet know

(3) what a name is?

Learning how to say what your name is requires the development of reflexive knowledge of what it is for a vocalization/word to be a name. The parrot who squawks 'Eliza' when asked 'What's your name?' does not know that 'Eliza' is its name, for it does not know what a name is.

And this is not all. Knowing what a name is also involves – at least in our culture – knowing such things as that every person has a name, that names often have parts, that your name belongs to you (although it is possible that someone else may have it as well), that a name cannot be easily changed, that (usually) when someone calls out your name, they are seeking your attention, that putting your name on things is usually to identify them as your own, and so on. In other cultures it may be that knowing what a name is involves knowing that saying an adult's name in public is impolite, or that you are not supposed to utter the name of a dead person, or that a person's name tells something about them (e.g., indicates who their parents are), and so on.[6] In other words, to know

(3) what a name is

is to know

(4) what a name is for us.

To know what a name is is to know how, in our languaculture, we use names, what function they have, and how we value, choose, change and generally treat them. 'Name' is neither a cultural universal nor some sort of acultural (autonomously linguistic) concept. If one is to learn a name, as Wittgenstein put it, one must already know what 'post' names occupy in our culture's language games (Wittgenstein, 1953: §257). The same point applies, we would argue, to learning how 'to talk about' something, how to 'ask for something', how to 'say what you mean', and how to perform all of those speech acts for which those in our (or any other) languaculture use words.

Consider one notable criticism that has been addressed to some attempts to facilitate the development of language by nonhuman primates. Some critics objected to the claim that the chimpanzee Lana had learned the symbol for 'please' (Rumbaugh, 1977) on the grounds that although Lana had learned to push the button marked 'please' at the beginning of a request sequence, she did not really understand what 'please' means because she had no awareness of the cultural function of saying 'please'. That is, she did not understand the difference between 'asking nicely' and 'not asking nicely', or how 'please' functions in creating and signalling that difference. To her, it was argued, 'please' is just a button that must be pushed to attain a desired object, much as one has to push the button marked 'Coke' to get a Coke from a soda machine. In contrast, when a child learns 'to ask nicely', she is not just learning to make the vocalization [pliz] before she says something. Rather, she is learning how to do what in her family's culture counts as 'asking nicely'. (It is irrelevant that in many cases this is not a precisely defined category or that the criteria for inclusion are indeterminate, context-relative, etc.) Moreover, learning how to 'ask nicely' involves learning a great deal more than just which words or sentences 'please' should be combined with. It involves learning what, in our culture, it is to ask nicely, the connections between asking nicely and various 'character traits' recognized within our culture: for example, 'being rude', 'being polite', 'being good', 'being well behaved', 'being respectful', and so on.

In other words, the linguistic world into which the child is entering is a *reflexively enculturated* world (Taylor, 1997: ch. 1). It is a world that we make and remake every day by talking about it, commenting on it, evaluating it and trying discursively to fashion it according to our likes and needs. Its structure and properties do not exist independently of reflexively constructive activities of the speakers and hearers themselves. What this means is that there is a reflexive character to knowing how to do things with words – in this case, knowing how to use words as names, as apologies, as requests, and so on. And there is also an enculturated character to that knowledge. That is, knowing how to do things with words is knowing the kinds of 'things' *we* do with words – the ways we conceive that words may be made use of in the cultural techniques that make up our form of life. (And this is not to imply that what counts as 'us' is anything but a socially contested, and reflexive, matter.) In learning how to use words to 'do things', the child is learning a reflexively enculturated form of knowledge. If we do not keep this clearly in view in the study of language acquisition, we will inevitably misunderstand how that knowledge is acquired.

At the same time it is crucial to see that the general point being made here is not limited to the acquisition of speech acts such as 'saying your name', 'apologizing', 'requesting', 'asking nicely', and so on. The reflexive enculturation of what the child learns extends right into the structural and semiotic 'core' of language. Consider: could a word – say, 'eyebrow' – have a meaning, the *particular* meaning that we say it has in English, if we had no reflexive means of saying what its meaning is, of explaining its meaning, or of distinguishing between its meaning and that of, say, 'eyelash' or 'eyelid'? What if we had no way of talking about its meaning, or about 'what the word for *this* is' (said by someone pointing at his eyebrow)? How, then, could its 'having a meaning' be anything like 'eyebrow' having the meaning that it has in modern English? And how would the property of 'having a meaning' (a *particular* meaning) be anything like we take it to be if there were no reflexive practices for talking about and thereby individuating 'meanings'? To become competent in language – including learning what particular words mean – the child must also become competent in those reflexive practices (cf. Taylor, 1997, 2000).

Speaking about the object of linguistic enquiry, the so-called 'founder of modern linguistics', Ferdinand de Saussure, said: 'The object is not given in advance of the viewpoint: far from it. Rather, one might say that it is the viewpoint adopted which creates the object' (Saussure, 1916: 8). We create names by speaking of certain vocalizations as names and by embedding those vocalizations in certain reflexive practices. We make words have the meanings they do, at least in part, by speaking of them as having those meanings. Human vocalizations, gestures and visible marks are not names and do not have meanings 'in advance of the viewpoint', as Saussure would say. The viewpoint creates the (languacultural) object. If we accept the implications of Saussure's point (which Saussure himself did not realize), then we must conclude that the child's development of language depends as much on the development of that reflexive viewpoint as it does on vocalizations, gestures and marks.

We do not wish to be misunderstood. Of course it is the case that children produce a great deal of verbal behaviour, and are typically (charitably) interpreted as performing many different kinds of speech act, long before they manifest any reflexive linguistic awareness of what the speech acts are that they are being taken to perform: in other words, long before they can participate competently in the reflexive practices. This is true whether we are talking about the speech acts of 'apologizing', 'saying your name' and 'describing' – or even 'talking about', 'requesting', 'answering' and 'meaning'. A child may well be saying 'Charlotte' at more or less appropriate moments but not yet manifest reflexive linguistic awareness that doing so counts as saying her name or what it means to have a name in our culture. But to become a competent member of our languaculture – truly to learn to do the things that we do with words – she must do more than act in ways that (at a superficial level) are indistinguishable from our 'primary' verbal behaviour. She must develop a competence in the reflexive languacultural practices that manifest her awareness of what she is doing when she speaks. Naturally this competence does not come all at once. The child will learn gradually what it means in her culture for ‘Charlotte’ to be her name, what it is for the word X to have the ‘meaning’ Y, what it is to ‘ask for something’, or to ‘talk about something’, or to ‘say where it hurts’, or to ‘apologize’. There is no a priori reason to assume that this learning ever attains a ‘steady state’. If this means that we must abandon the ‘commonsense’ notion of a child moving from not knowing ‘what X means’ yesterday to knowing ‘what X means’ today, then so be it. Surely this ‘commonsense’ notion is another of those legacies of the codebook conception of language whose abandonment is long overdue.

To summarize: the language learner is not just an agent, but a cultural agent learning to do the sorts of culturally significant things that make up our form of life. To learn how to do things with words is to learn our culture’s reflexive conceptualization of what can be done with language and how language matters in the living of our common lives. What a child learns in learning about language is inextricably woven together with the other things the child learns about our culture. In other words, in learning a language, a child is learning a necessarily enculturated phenomenon. To the extent that developmentalists ‘abstract’ the child’s acquisition of linguistic ability from its acquisition of other cultural abilities, they render the former both incomprehensible and inexplicable (except by a *deus ex machina* such as LAD).

Conclusion: the house the child builds

> Let us imagine a language for which the description given by Augustine is right. The language is meant to serve for communication between a builder A and an assistant B. A is building with building-stones: there are blocks, pillars, slabs and beams. B has to pass the stones, and that in the order in which A needs them. For this purpose they use a language consisting of the words ‘block’, ‘pillar’, ‘slab’, ‘beam’. A calls them out; – B brings the stone which he has learnt to bring at such-and-such a call. – Conceive this as a complete primitive language.
>
> Ludwig Wittgenstein, *Philosophical Investigations*

There is something appealing about comparing a child learning language to an apprentice learning how to build a house. For language is something that we ourselves construct and inhabit, something that shapes us as much as we shape it. What Bruner showed is that, while the child may be ideally suited to become a language-builder, this can happen only if she has a caregiver-mentor to assist her in acquiring the many skills required to be proficient in the craft. For not only are the functions of words as diverse as the functions of the various tools that one finds in any particular culture’s toolbox (Wittgenstein, 1953: §11), but the tools themselves are constantly changing according to a culture’s ever-changing tastes in housing styles. If language is like a building, it is one that can never be finished.

Like so many of the fundamental properties of language and its development, this open-ended, constructive character of language acquisition is obscured on the generativist account. Language acquisition is given the form of a logico-mechanical problem. How must a neuro-machine be designed so that when it receives the input of a language (as this is conceived by the generativist model), it will deduce the language's 'structure'? Generativism renders invisible agency, normativity and reflexivity, and portrays culture as something peripheral to language. The language-user's agency becomes a matter of 'performance', the characteristics of which depend entirely on the theoretically more interesting 'competence' which it merely enacts. The normative character of language is reduced to a matter of internal, mechanical rules. And the things done with language, together with 'words', 'names', 'meanings' are rendered as species of *realia*: autonomously linguistic universal entities and acts that exist and have distinct properties independently of the language-user's reflexive conception of them.

In this light, Bruner's breakthrough has been to nudge the essentially agential, normative, reflexive and enculturated nature of language back into view. Seen from the perspective of the social interactionist revolution that his work has stimulated, these are the ingredients that make language acquisition possible. But to complete the aspect-shift begun by Bruner we now need to abandon the generativist picture of what the child acquires: that free-standing, reflexivity-less, normative-less, agency-less, culture-less entity that language supposedly is once the scaffold is pulled away. Instead we need to explore the implications of the idea that the 'scaffold', which assists the child in developing language, remains a no less essential part of the 'product' of that development. That is, we need to recognize that, like the Pompidou Centre, what was initially thought to be the constructor's external scaffolding is actually part of the edifice itself.

Notes

1 The term 'secondary altriciality' was coined by Adolf Portmann in the 1940s, but made famous by Stephen Jay Gould's 'Human babies as embryos' (1977). Portmann describes mammals that have large litters of undeveloped, helpless offspring as 'altricial' in contrast to 'precocial' mammals, which give birth to a few well-developed offspring capable of taking care of themselves at birth. In many respects, humans have characteristics associated with precocial mammals, e.g., long life spans, large brains and complex social behaviour. But by precocial standards the human infant is born approximately nine months prematurely (a longer gestation period would be incompatible with bipedality in the mother), and is helpless at birth. Thus Portmann describes human babies as 'secondarily altricial'.

2 We use the term 'innate' with trepidation, for the term is often used simple-mindedly. Sometimes when a behaviour is described as innate, it is meant that the behaviour is produced by a specific, identifiable set of genes. Few behaviours of any complexity can be innate in this sense. It is more plausible to take

the term to refer to our genetic endowment per se, but then its use is often empty, since there are so many factors involved in how that endowment is realized (Elman, Bates, Johnson, Karmiloff-Smith, Parisi and Plunkett, 1996: 357).

3 For a discussion of the obstacles confronting caregivers of blind infants, see Fraiberg, 1977.

4 The same point no doubt applies to the mother's vocalizations. The very fact that – in Western cultures at any rate – primary caregivers direct so much speech at the infant from birth, and that caregivers' speech patterns are so closely attuned to the baby's states of arousal, suggests that speech, as much as gaze, is vital for a child's neurobiological and physical development (see Monnot, 1999).

5 Kaye (1982) even refers to the 'dialogue-like' pattern of the infant's burst–pause sucking, with the mother quiet during the bursts and active during the pauses.

6 Amongst the Inuit, a child receives the name of some individual, either living or dead, of either sex, and this defines that child's kinship relations with the rest of his or her community. Thus, if a boy is named after his paternal grandmother, he will call his father *irniq* ('son'), and his father will call him *anaana* ('mother'). These kinship names are taken very seriously; so much so that, whenever possible, one addresses people by kinship terms rather than by their personal names. Thus name-learning involves mastering the complex social matrix of one's community (Dorais, 1997).

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4

BRUNER AND CONDILLAC ON LEARNING HOW TO TALK

Talbot J. Taylor

> It is quite illusory to believe that where language is concerned the problem of origins is any different from the problem of permanent conditions. There is no way out of the circle.
>
> Ferdinand de Saussure, *Course in General Linguistics*

In Book Three of his *Essay Concerning Human Understanding*, Locke poses a puzzle which has troubled scholars ever since. He suggests that language is not adequate to accomplish its principal task, which is to convey thoughts from the mind of the speaker to that of the hearer (Locke, 1978: III.i.2). Nevertheless, Locke maintains that the 'common use' of words regulates their meaning tolerably well for the purposes of ordinary discourse (III.ix.8). So what is it about the use of language in ordinary talk that mitigates or conceals its fundamental inadequacy?

For Locke, 'the imperfection of words' is that they can signify only thoughts in the speaker's mind. As the hearer cannot know the speaker's thoughts, he cannot be sure what the latter's words signify. The words you utter express your ideas, but when I hear those words, I can interpret them only as signs of my own. Thus language fails to provide an intersubjective conduit between our minds. It is therefore puzzling that Locke should feel that our ordinary use of language is successful. How, in spite of the privacy of our minds, do we manage to communicate with each other?

In the *Essay*, Locke passes over this issue with little comment. His aim is rather to repair the imperfections of language so that it may become a reliable tool in scientific discourse. The puzzle did, however, exercise the minds of his eighteenth-century followers, such as the abbé de Condillac. They struggled to show how language could be used as an effective vehicle of communication, despite the fact that 'the same words have in different mouths, and often in the same, very different meanings' (Condillac, 1947: 762).

Condillac hoped to find the solution to Locke's puzzle through speculation about the phylogenetic origins of language. If we could determine how men first came to use language, we could discover the intersubjective principle regulating ordinary discourse. For although language is primarily an artificial creation – a social institution – it arose from natural capacities with which every human individual is endowed. There is presumed to be an essential continuity between the human individual's natural gifts and the artificial, social practice of using language for communication. Thus, by discovering how human beings in their natural state might have learned to use language, we can identify its fundamental principle of intersubjectivity, thereby resolving Locke's communicational puzzle.

The question of the phylogenetic origins of language does not arouse the same interest today as it did in the Enlightenment, when it was perhaps the central mystery about language. It is not that contemporary linguists are indifferent to the topic; it is just that there is no way to approach it without relying heavily on speculation, a method few modern linguists find congenial. We have no 'hard' evidence about the phylogenesis of language, nor can we hope to discover any. Those baffled by Locke's puzzle today tend to turn rather to the ontogenesis of language, hoping that the explanation of the intersubjective success of ordinary linguistic practices resides in how children learn to use language.

The thesis to be argued here is that the investigations of the origins of language, whether phylogenetic or ontogenetic, are equally regressive enterprises. The assumptions they adopt and the reasoning they embody are strikingly similar. *The study of ontogeny recapitulates the study of phylogeny.* Yet while the 'bow-wow' and 'grunt-grunt' theories of phylogenesis provide readers of linguistic textbooks with comic relief, current models of linguistic ontogenesis are the height of theoretical respectability.

It is obvious that Locke's puzzle will only interest proponents of a mentalist view of language. It had no place among the behaviourist's concerns. Nor did it receive much attention after generativism transformed the psychological foundations of linguistics, for the extreme nativist position adopted by Chomsky and his followers also stifled interest in the issue. The epistemological worries behind Locke's puzzle take hold only once it is conceded that crucial aspects of language-use are learned.

In this regard, psycholinguistics is ripe for a revival, in some form or other, of Locke's puzzle. After the downfall of behaviourism, generativism dominated psycholinguistic investigations. Psycholinguists sought evidence of the mental representation of transformational rules, deep structures, lexical insertion, cyclical ordering of rules, and the like. This had a striking effect on studies of language acquisition. What had traditionally been the domain of psychology became a central topic of linguistics proper. Moreover, methods of study were significantly altered. It is a major tenet of generativism that the principles underlying language competence are innate. Consequently, there is no real point in studying how children learn language; in an important sense, they already know it. Instead, energy was devoted to characterizing that innate competence by discovering the principles universal to all languages. In this way, studies of language acquisition had no need to investigate children at all; they could search instead for the universal properties of fully developed grammars.

Recently, however, Chomsky's dominance has declined. Psychological and computational explorations of language processing have provoked increasing doubts that any features of the generativist model of language have psychological reality. Psychologists in turn have gradually reclaimed certain areas of child language studies. This has resulted in the re-emergence of a certain degree of empiricism. In this, the work of Jerome Bruner has had the greatest influence.

The ontogenesis of language use: mediating between genes and culture

In *Child's Talk: Learning to Use Language* (1983), Bruner situates his position somewhere between the extremes of empiricism and nativism. He adopts George Miller's characterization of a pure empiricist view of language acquisition as 'impossible' and pure nativism as 'miraculous', and professes to occupy a middle position incorporating only the best of each. In order to bridge the gap between empiricism and nativism, and, at the same time, to restore some part of language acquisition to psychology, Bruner splits language acquisition into two. Not only must the child somehow attain knowledge of language (i.e., linguistic competence), he must also acquire an ability to use that knowledge for communicational ends (i.e., pragmatic competence). It is the acquisition of the latter that forms the topic of the psychological investigation of child language. The linguist, we may assume, retains possession of the question of how linguistic knowledge is acquired. With this division, Bruner is able to achieve a (historic?) compromise with nativist generative linguistics. He concedes the nativist position on linguistic knowledge, yet maintains that it remains to be discovered how children learn to use that knowledge for the purposes of communication: that is, how they acquire the ability to refer, request, deny, warn, query and so on:

> In this view, entry into language is an entry into discourse that requires both members of a dialogue pair to interpret a communication and its intent. Learning a language, then, consists of learning not only the *grammar* of a particular language but also learning how to realize one's intentions by the appropriate use of that grammar. (Bruner, 1983: 38)

While Bruner accepts that the child's knowledge of language is largely the product of an innate 'set of language-learning capabilities, something akin to … LAD' (1983: 18–19), he argues that the child's pragmatic competence is formed in the environment of socialization routines imposed by the mother. The child's formative communicational experiences are not random but are the result of constructive patterns of interactional training:

> The development of language, then, involves two people negotiating. Language is not encountered willy-nilly by the child; it is shaped to make communicative interaction effective – fine-tuned. If there is a Language Acquisition Device (LAD), the input to it is not a shower of spoken language but a highly interactive affair shaped, as we have already noted, by some sort of Language Acquisition Support System (LASS). (Bruner, 1983: 39)

In other words, without the LASS there would be nothing for the little LAD to do. The acquisition of language is aided by the mother, who arranges early interaction with the child within routinized and familiar formats. These formats – the central vehicle of LASS – provide a controlled, competence-sensitive guide to the child's experience of the function of language, forming a continuous bridge between prelinguistic and linguistic interaction.

Thus, while Bruner accepts the nativists' claim that linguistic knowledge is biological in origin, he insists that this biological capacity necessarily requires cultural expression. And culture must to some degree be learned:

> While the *capacity* for intelligible action has deep biological roots and a discernible evolutionary history, the *exercise* of that capacity depends upon man appropriating to himself modes of acting and thinking that exist not in his genes but in his culture. (Bruner, 1983: 23)

But, while culture is a social phenomenon, a biological capacity is the possession of an individual. So how does the child learn to exercise an individual capacity in a shared, social form? Bruner continues:

> There is obviously something in mind or in 'human nature' that mediates between the genes and the culture that makes it possible for the latter to be a prosthetic device for the realization of the former. (1983: 23)

What mediates between genes and culture is the learned ability to use genetically encoded linguistic knowledge for the communicational ends of social interaction. Thus a (the?) central puzzle in the study of language acquisition must be how the individual child acquires the ability to perform the social activity of using language.

Perhaps the most significant feature of Bruner's theory is that, having split the notion of language acquisition into two, he insists that linguistic and pragmatic development are interdependent:

> the infant's Language Acquisition Device could not function without the aid given by an adult who enters with him into a transactional format. That format, initially under the control of the adult, provides a Language Acquisition Support System, LASS. It frames or structures the input of language and interaction to the child's Language Acquisition Device in a manner to 'make the system function.' In a word, it is the interaction between LAD and LASS that makes it possible for the infant to enter the linguistic community. (Bruner, 1983: 19)

So, the development of the child's genetically endowed Language Acquisition Device depends upon her acquiring the mediating ability to use the fruits of that endowment in social intercourse. The origin and development of that mediating ability form the twin topics of *Child's Talk*.